Jan. 1988
No. 6463

JVC Service Manual

REMOTE CONTROL UNIT

MODEL RM-P200

CAMERA CABLE

MODEL VC-P110/-P112/-P113/-P114

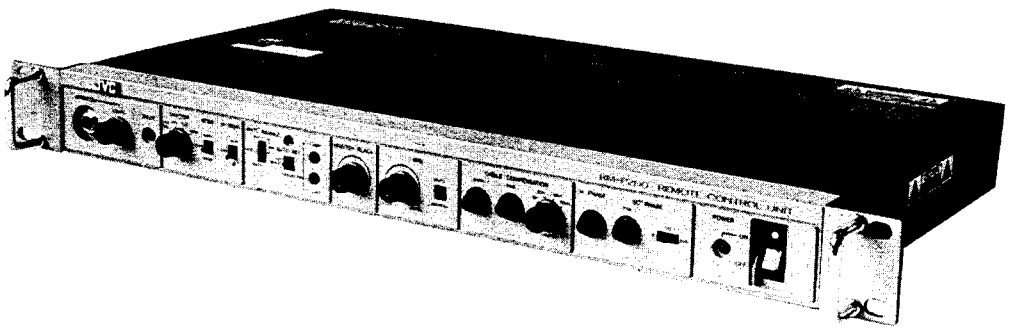
CABLE ADAPTER (Coupling Connector)

MODEL KA-280

VICTOR COMPANY OF JAPAN, LIMITED

No. 6463

JVC Service Manual



MODEL **RM-P200**

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Printed in Japan

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded ( ) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors

5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

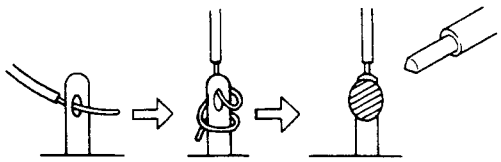


Fig. 1

6. Observe that wires do not contact heat producing parts (heat-sinks, oxide metal film resistors, fusible resistors, etc.)

7. Check that replaced wires do not contact sharp edged or pointed parts.

8. When a power cord has been replaced, check that 10—15 kg of force in any direction will not loosen it.

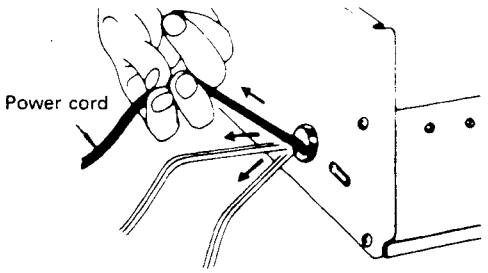


Fig. 2

9. Also check areas surrounding repaired locations.

10. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

11. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.
    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

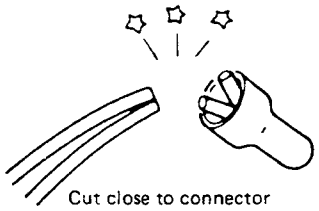


Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

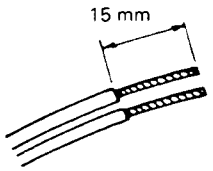


Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

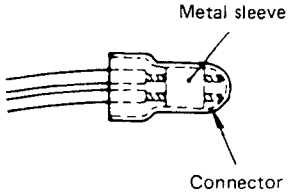


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

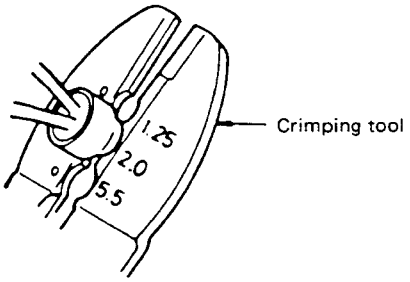


Fig. 6

(5) Check the four points noted in Fig. 7.

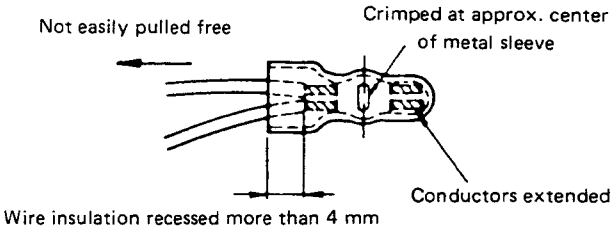


Fig. 7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

2. **Dielectric strength test**
Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

3. **Clearance distance**
When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table below.

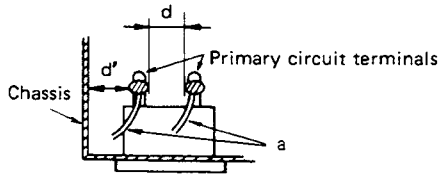


Fig. 8

4. **Leakage current test**
Confirm specified or lower leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method: (Power ON)
Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure and following table.

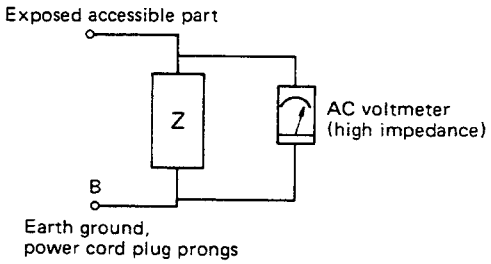


Fig. 9

AC Line Voltage	Region	Insulation Resistance	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	≧ 1 mΩ/500 V DC	1 kV 1 minute	≧ 3 mm
110 to 130 V	USA & Canada	–	900 V 1 minute	≧ 3.2 mm
*110 to 130 V 200 to 240 V	Europe Australia	≧ 10 mΩ/500 V DC	4 kV 1 minute	≧ 6 mm (d) ≧ 8 mm (d') (a: Power cord)

*Class II model only.

Table 1 Ratings for selected areas

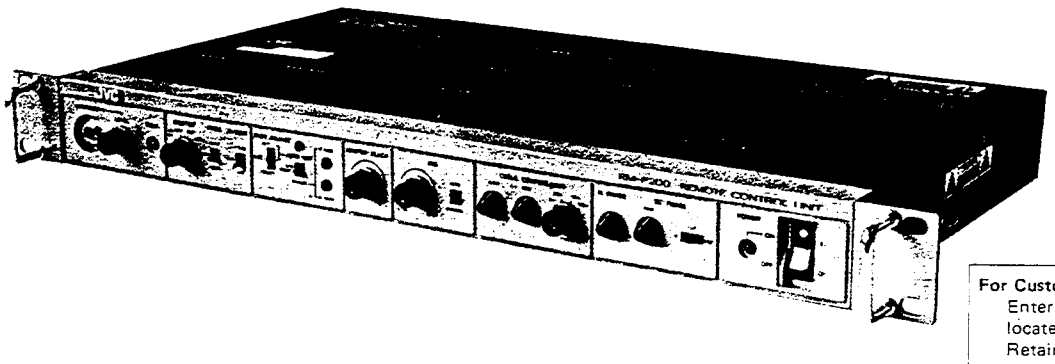
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (b) to:
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF, 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current ratings for selected areas

Note: This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

JVC Instructions

REMOTE CONTROL UNIT
RM-P200



For Customer Use:

Enter below the Serial No. which is located on the top of the cabinet. Retain this information for future reference.

Model No. RM-P200

Serial No.

Due to design modifications, data given in this instruction book are subject to possible change without prior notice.

WARNING:

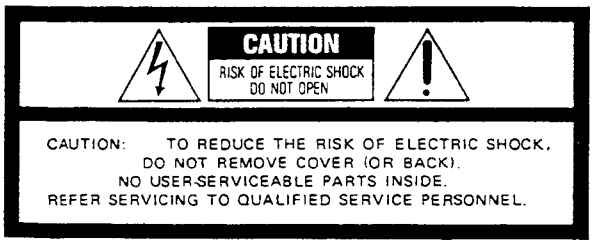
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

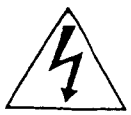
AVERTISSEMENT:

POUR EVITER LES RISQUES D'INCENDIE OU D'ELECTROCUTION, NE PAS EXPOSER L'APPAREIL A L'HUMIDITE OU A LA PLUIE.

Warning Notice
FOR YOUR SAFETY

To ensure safe operation the three-pin plug supplied must be inserted only into a standard three-pin power point which is effectively grounded through the normal household wiring.
Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth ground. Wrongly wired extension cords are a major cause of fatalities.
The fact that the equipment operates satisfactorily does not imply that the power point is properly grounded and that the installation is completely safe. For your safety, if in any doubt about the correct grounding of the power point, consult a qualified electrician.





The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION
This equipment must be grounded using a 3-pin grounded power outlet.

Thank you for purchasing the JVC RM-P200 Remote Control Unit. To gain maximum benefit from it and for correct operation, please read these instructions carefully. After reading, retain this booklet for future reference.

The RM-P200 is a remote control unit that can operate necessary functions from a distance when using a JVC CCD color video camera KY-20 or KY-15, as a studio video system.

CONTENTS

FEATURES

- **Can be extended up to 100 m (325 ft)**
  The distance between the camera and remote control unit can be extended up to 100 m (325 ft) using the optional VC-P110 series camera cables. Even in this case the camera power is supplied from the RM-P200; therefore, it is not necessary to prepare a separate power supply for the camera.
- **Built-in genlock function**
  Genlock operation is possible with a composite video signal (VBS) or black burst (B.B.) signal. In addition, SC phase and H phase can be adjusted on the front panel.
- **Camera control by serial data communication**
  A serial data transmission method is employed for camera control signals.
  The camera and remote control unit are connected with two data lines; CPUs built in the camera and the remote control unit perform mutual communications when controlling the camera so that accurate and reliable control becomes possible.
- **Multiple outputs**
  The unit is equipped with two output connectors for the composite video signal. Moreover, any of the following can be selectively output according to purpose and use: R/G/B component signals, Y/R-Y/B-Y component signals or separate Y/C signals compatible with S-VHS VTRs.

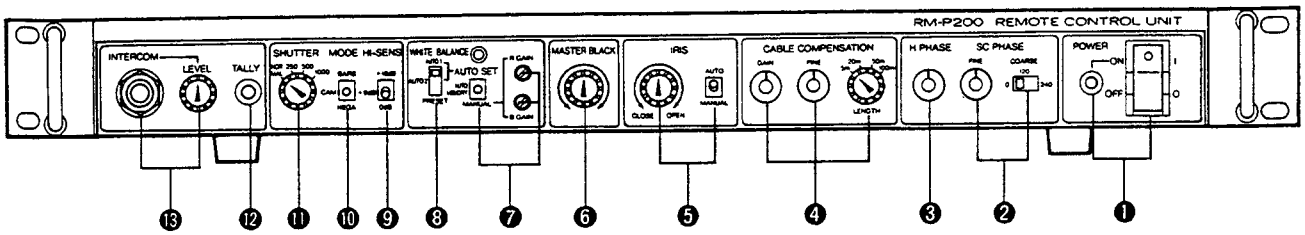
PRECAUTIONS

Safety Precautions

- Use only with the rated power supply.
- Do not modify the unit or operate it with the cover panel removed.
- Do not allow inflammable objects, water or metallic objects to get inside the unit as it will cause damage or malfunction.
- When not to be used for a long period of time, be sure to disconnect the power cord from the power outlet.
- When there is any abnormality (noise, smell, smoke, etc.) with the unit, immediately switch off, disconnect the power cord from the power outlet, and contact your nearest JVC-authorized service agent.

CONTROLS, CONNECTORS AND INDICATORS

Front Panel



❶ POWER switch and indicator

Switches ON/OFF the power supply. Set the switch to ON to supply the power to this unit and the connected camera, and an LED will light.

❷ SC-PHASE controls

COARSE: Adjusts the subcarrier phase of the camera output signal in three steps 0° – 120° – 240°, with respect to the subcarrier phase of the external reference signal (VBS or B.B.).

FINE: Adjusts the subcarrier phase of the camera output signal within the range of ±60° with respect to the subcarrier phase of the external reference signal (VBS or B.B.).

❸ H. PHASE control

Adjusts the horizontal sync signal phase of the camera output signal with respect to the horizontal sync signal of the external reference signal (VBS or B.B.).

❹ CABLE COMPENSATION controls

These controls allow compensation of the attenuation of the video signal due to the length of the camera cable.

LENGTH: Set this switch according to the length of the camera cable used.

FINE: Fine adjustment for compensation of the chroma (color) component of the video signal.

GAIN: Fine adjustment for compensation of the luminance component of the video signal.

❺ IRIS control mode switch and adjustment control

Controls the iris of the standard lens of the camera connected to this unit.

Set this switch to AUTO to control the iris automatically and to MANUAL to control manually by using the adjustment control on the left of the switch.

Note:

When controlling the lens iris with this unit, be sure to set the iris mode switch of the lens to "A" mode.

❻ MASTER BLACK control

Varies the black level of the camera connected to this unit.

❼ AUTO SET switch, indicator and manual controls

AUTO SET: Push the switch upward; the setup (black/white balance) or white balance of the camera connected to this unit will be automatically adjusted. A single push of the switch (of less than one second) will engage the auto white balance adjustment mode, and holding the switch pushed for longer than one second will engage the auto setup adjustment mode.

During the auto-set operation, the lamp above the switch lights. When the operation ends normally, the indicator will go out; if proper operation did not take place, it will blink.

- **For errors in white adjustment, it will blink for about 6 seconds at one-second intervals.**
- **For errors in black adjustment, it will blink for about 6 seconds at 0.5-second intervals.**

Notes:

- If the lamp should blink, set the switch to AUTO SET again after confirming the connection between this unit and the camera, operating conditions of the camera's auto-set, etc.
- Refer to the instructions of the camera for the auto-set operation, its conditions, etc.
- For the auto-set operation, set the WHITE BALANCE select switch ❽ to either AUTO 1 or AUTO 2.

AUTO MEMORY: Set to this position to use the white balance setting selected with the WHITE BALANCE select switch ❽.

MANUAL: Set to this position to control the gain of the video signal with the R GAIN and B GAIN controls on the right of the switch.

❽ WHITE BALANCE select switch

Selects the white balance of the camera connected to this unit as follows:

AUTO1/AUTO 2: When activating the auto-set circuit with the AUTO SET switch ❼, set the WHITE BALANCE select switch to either of these positions. After the operation is finished, the setup result will be held in the camera's memory corresponding to the selected position.

PRESET: For using the white balance preset in the camera (3200 K).

❾ HI-SENS switch (0 dB/+9 dB/+18 dB)

This switch increases the camera's sensitivity in 2 steps; 0 dB/+9 dB/+18 dB can be selected.

❿ Output MODE select switch

Selects the video signal output from this unit.

BARS: Sets the camera's color bars generator to ON to output the color bars signal.

CAM: Outputs the video signal being shot by the camera.

NEGA: Outputs the video signal being shot by the camera as a reversed (negative) signal.

⓫ SHUTTER switch

Selects the camera's electronic shutter speed among 1/60 sec. (NORMAL), 1/250 sec. (250), 1/500 sec. (500) and 1/1000 sec. (1000).

⓬ TALLY lamp

Lights when a rated tally signal is applied to the TALLY signal input connector on the rear panel.

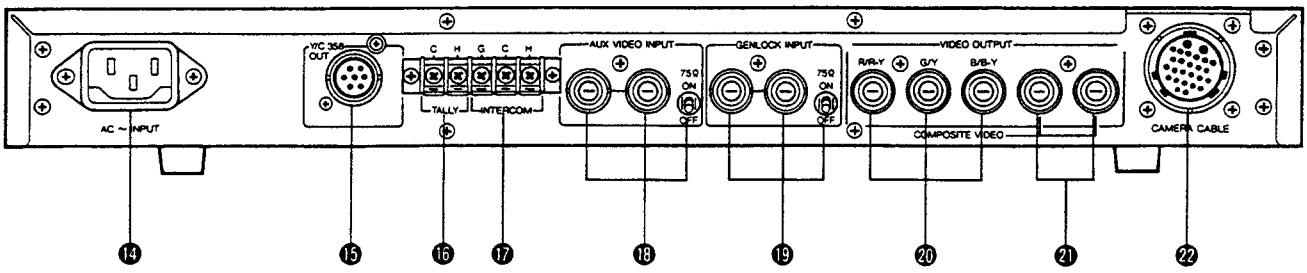
⓭ INTERCOM level control and jack

LEVEL: Adjusts the volume of the intercom.

Use a headset with 200 – 600 ohms/1 kHz for intercom.

Recommended headset: KA-300 (optional)

Rear Panel



⑭ AC INPUT connector
Supply the rated voltage with the AC power cord provided.

⑮ Y/C 358 OUT connector (7-pin female)
This is an output connector for the separate Y/C signals (C signal: 3.58 MHz) compatible with S-VHS VTRs.

Notes:

- This connector can be used only when the Y/C OUT selector (one of the VIDEO SELECT switches) in the video camera is set to ON.
  Pay attention to it since the camera is shipped from the factory with this Y/C OUT selector set to OFF. For operation of the selector, refer to the "Operation" on page 6.
- When using this connector, the R/G/B, Y/R-Y/B-Y connectors ⑳ cannot be used.

⑯ TALLY terminals
Apply a rated tally signal from a special effects generator (SEG) or a switcher.

⑰ INTERCOM terminals
This is an input/output terminal of the intercom signal.

⑱ AUX VIDEO INPUT connectors (BNC)
The return video signal from a special effect generator or switcher can be input via these connectors to be sent to the viewfinder. When using only one of the connectors, set the 75-ohm termination switch (75 Ω ON/OFF) to ON.

⑲ GENLOCK connectors (BNC)
Composite video signal (VBS) or black burst signal can be input through these connectors as the reference signal for genlocking. When using only one of them, set the 75-ohm termination switch (75 Ω ON/OFF) to ON.

⑳ R/G/B, Y/R-Y/B-Y connectors (BNC)

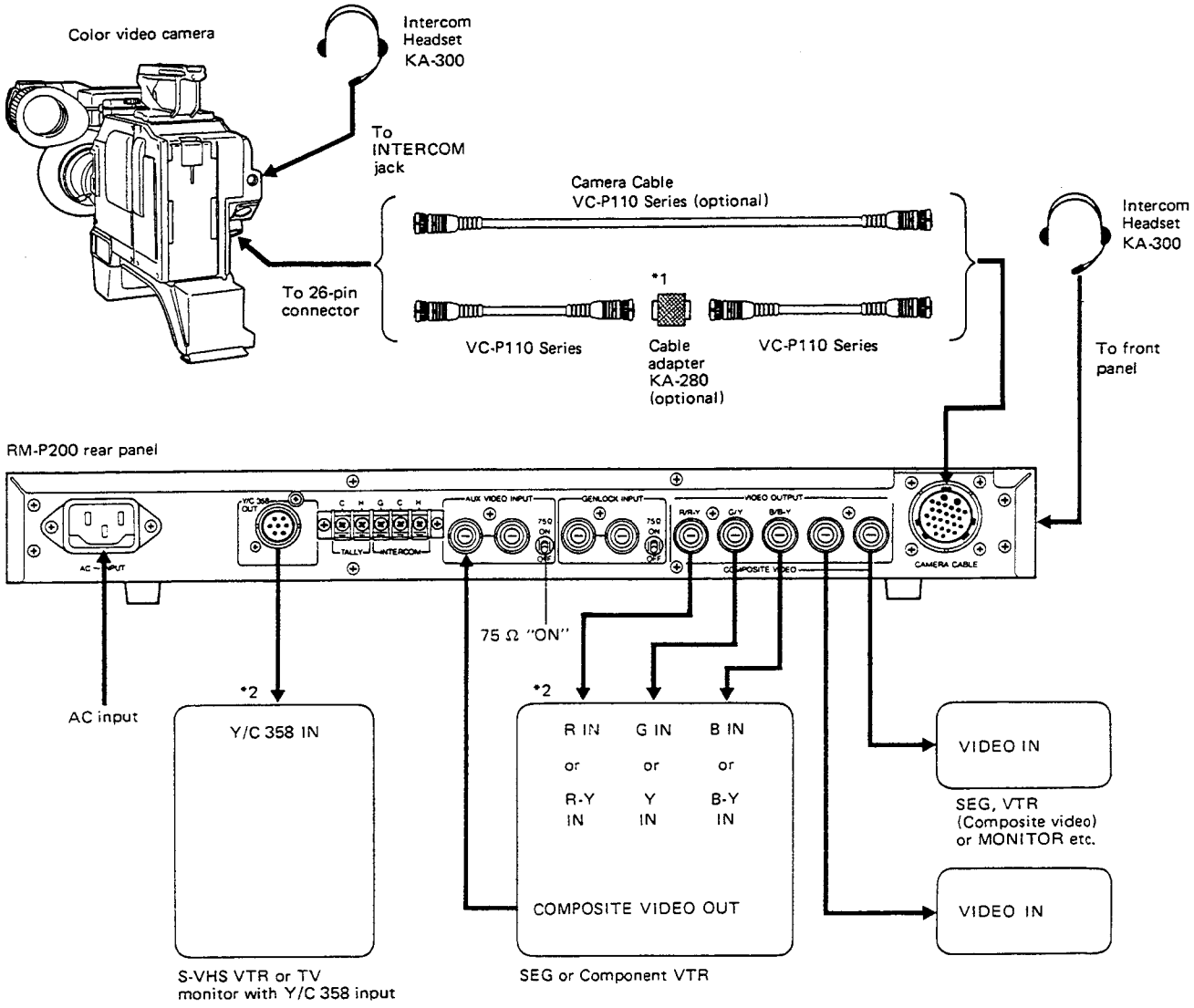
- These are output terminals of the R/G/B or Y/R-Y/B-Y signals. The signal selection is performed with the VIDEO SELECT switch inside the camera. Prior to shipment, this switch has been set to output the R/G/B signals.
- For setting the VIDEO SELECT switch, refer to the "Operation" on page 6.

㉑ COMPOSITE VIDEO signal output terminals (BNC)
The composite video signal is available from these connectors. (2 output circuits, 1 Vp-p, 75 ohms)

㉒ CAMERA CABLE connector (26-pin female)
Connect this unit to the camera using the VC-P110 series camera cable (optional).

CONNECTIONS

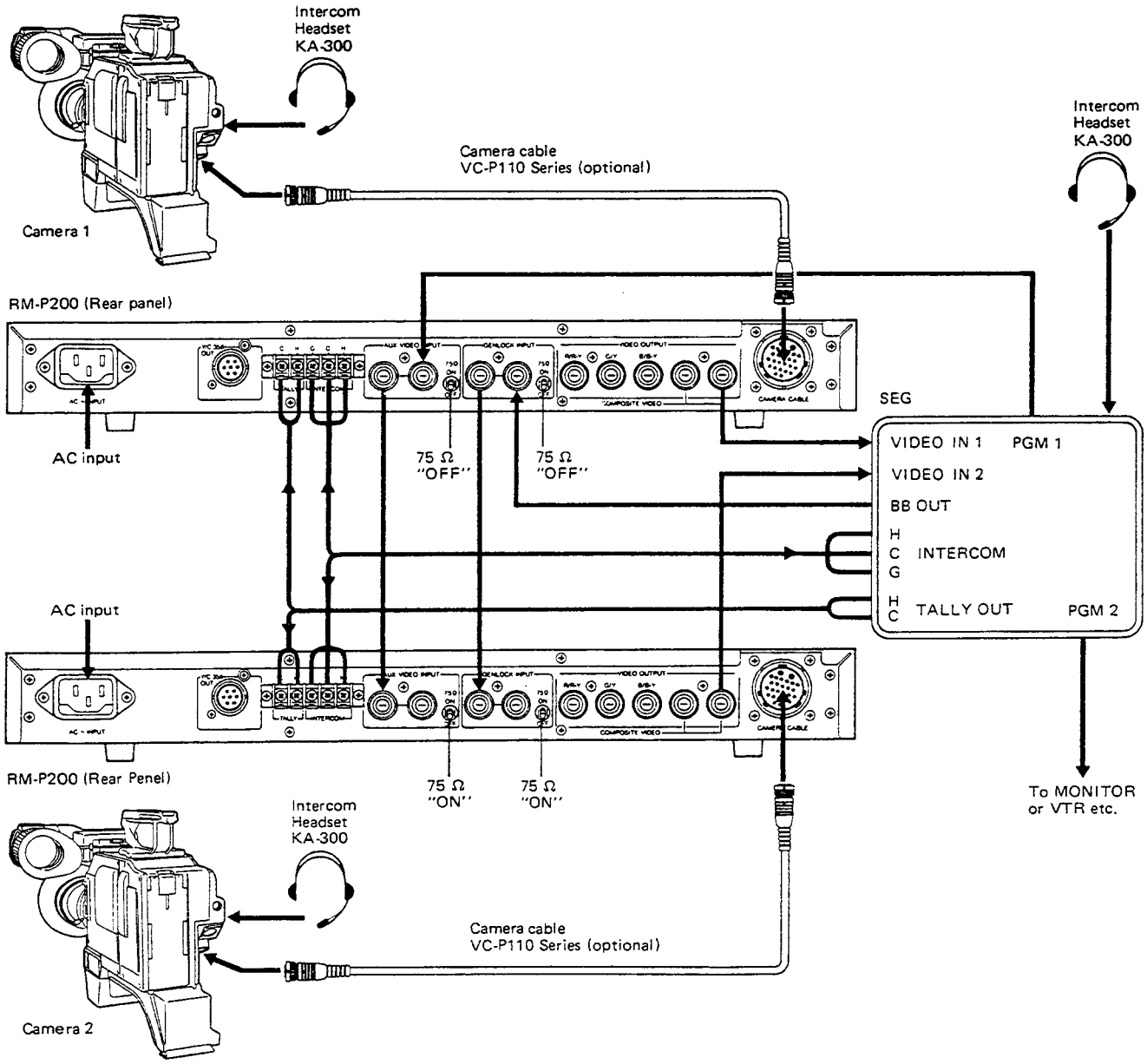
1. BASIC CONNECTIONS OF A COLOR VIDEO CAMERA



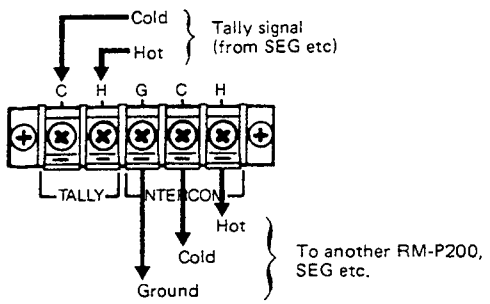
*1. When connecting the camera to this unit, two VC-P110 series camera cables (optional) can be used via the KA-280 cable adapter (optional); However, the total length of the cables should not exceed 100 m (325 ft). If 100 m (325 ft) should be exceeded, the RM-P200 will not function properly for compensation, leading to drop of the video signal or chroma level.

*2 The separate Y/C 358, R/G/B and Y/R-Y/B-Y signals cannot be output at the same time. (The composite video signal is always output from the COMPOSITE VIDEO output connectors.)

2. WHEN USING TALLY AND INTERCOM WITH 2 UNITS OF RM-P200



3. REGARDING TALLY AND INTERCOM



Tally signal:

- The tally circuit is activated when 5 to 24 V DC or 6 V AC power is supplied or when the "make contact" circuit is energized. Use the switch S2 on the RM-P200 circuit board to select either the "V" power supply or "M" "make contact" system. Prior to shipment from the factory, the S2 is set for "V" power supply operation.
  Ask authorized JVC service agent for servicing.

Intercom:

- Use a 200 – 600 ohms/1 kHz headset for the intercom. **Recommended headset:** KA-300 (optional) (microphone: 50 ohms/DC, earphone: 200 ohms/1 kHz)

OPERATION

Note:

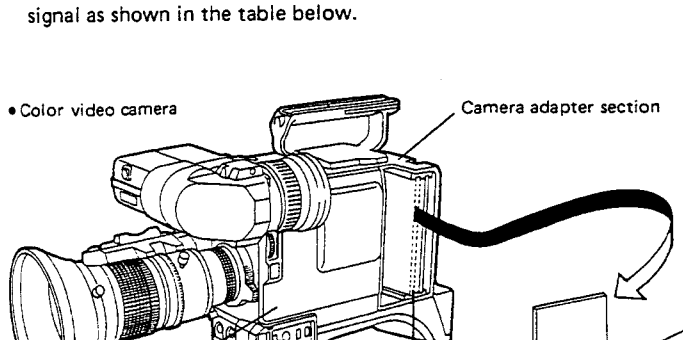
- When this unit is connected to a camera, the following switches and buttons on the camera are inoperative.
  - **AUTO SET button**
  - **WHITE BAL (AUTO 1, AUTO 2, PRESET) switch**
  - **HIGH-SENS (0 dB, +9 dB, +18 dB) switch**
  - **MODE (CAM, BARS, NEGA) select switch**
  - **SHUTTER (NORMAL, 250, 500, 1000) select button**
- When the RM-P200 is connected to a camera, composite video signal and R/G/B signals are available from RM-P200 output terminals.
- When any of the Y/R-Y/B-Y component signals or separate Y/C signals are to be used as an output signal, reset the switch inside the camera following the procedure below.

BEFORE OPERATION

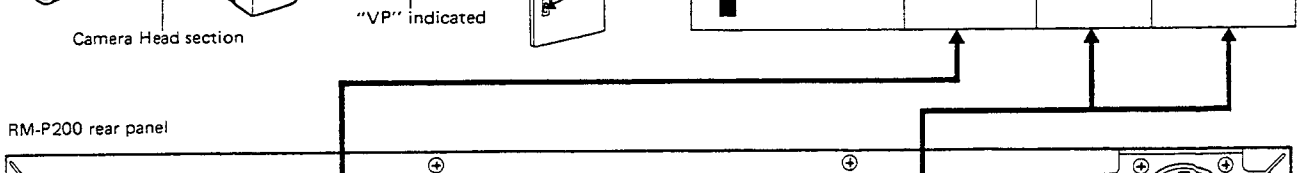
1. Remove the right side cover in the back section (camera adapter) of the camera.
2. Pull out the VP board (indicated on the guide rail) and set the switches on the board according to the desired output signal as shown in the table below.

Note:

- Among the R/G/B, Y/R-Y/B-Y and separate Y/C signals, two or three signals cannot be output simultaneously.
- The composite signal is always output regardless of the switch position.
- When removing the VP board, be sure to switch off the powers of this unit and the camera.



VIDEO SELECT Switch \ Required output signal	Y/C separate signals	R/G/B signals	Y/R-Y/B-Y signals
ON ↔ OFF 1 : Y/C 2 : RGB 3 : AUTO 4 : COMPO	Only Y/C selector "ON"	Only RGB selector "ON"	Only COMPO selector "ON"



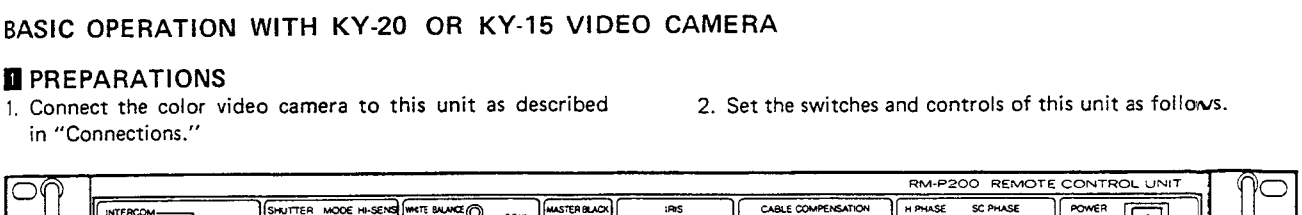
Caution:
When a VTR is to be connected directly to the camera adapter section, not using the RM-P200, be sure to reset only the AUTO selector (one of the VIDEO SELECT switches) to "ON".

Composite video signals are always output.

BASIC OPERATION WITH KY-20 OR KY-15 VIDEO CAMERA

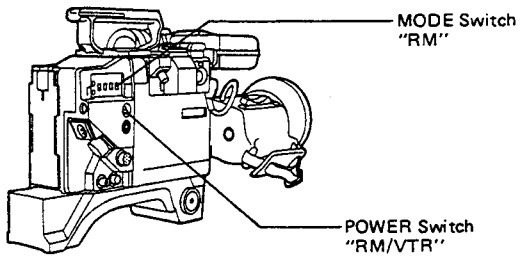
1 PREPARATIONS

1. Connect the color video camera to this unit as described in "Connections."
2. Set the switches and controls of this unit as follows.

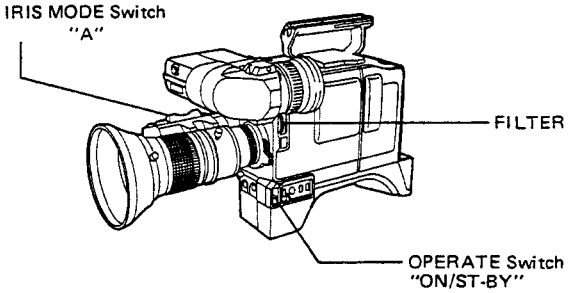


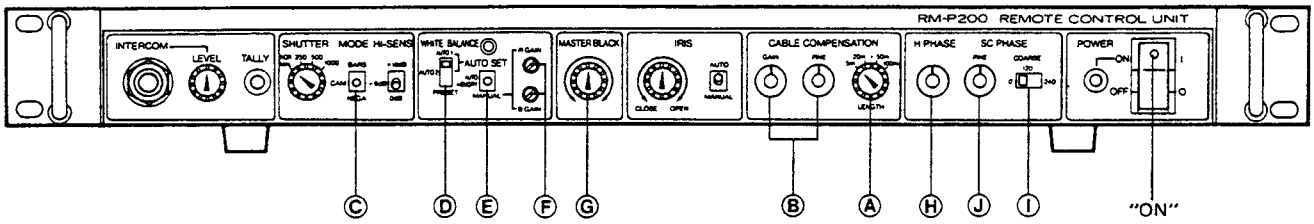
2 SETTING THE SWITCHES ON THE CAMERA

1. Set the MODE switch of the camera's adapter section to "RM" and the POWER switch to "RM/VTR".
2. Set the OPERATE switch of the camera head section to "ON/ST-BY" and the IRIS mode switch of the lens to "A".



3. Set the filter turret according to the illumination of the object.
4. Switch on the power of the camera and RM-P200.

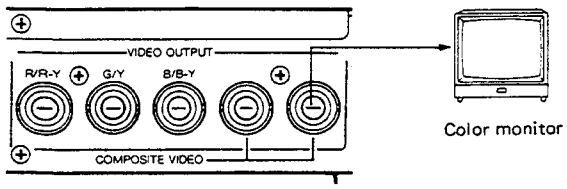




3 ADJUSTING VIDEO PICTURE LEVEL

1. To compensate for attenuation due to the camera cable length.
   - Set the LENGTH switch Ⓐ to the nearest value of the camera cable length being used.
   - Set the FINE and GAIN controls Ⓑ to the center.
2. Set the output MODE select switch Ⓒ to "BARS" to output color bars.
3. Connect a color monitor TV to the COMPOSITE VIDEO OUT connector and adjust the FINE and GAIN controls.

When a vectorscope or waveform monitor is connected to the COMPOSITE VIDEO OUTPUT, more accurate adjustment is possible.



FINE : Fine control for chroma level.
GAIN: Gain control for luminance level.

4. Set the output MODE select switch Ⓒ to "CAM".

4 ADJUSTING WHITE/BLACK BALANCE

- In a studio with 3200 K lighting, proceed as follows: Shoot a gray scale pattern, lit with approx. 3000 lux, to full frame in the monitor screen.

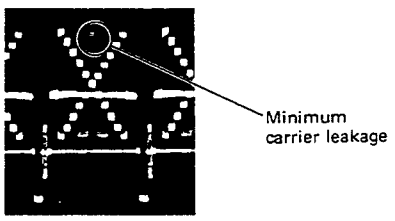
Auto Adjustment (Auto setup and Auto white)

1. With the WHITE BALANCE switch Ⓓ , select either of the memories ("AUTO 1" or "AUTO 2") to hold a white balance setting.
2. Press the AUTO SET switch Ⓔ upward to the "AUTO SET" position (non-locked).
   - For auto white balance adjustment, press the switch and release it within one second.
   - For auto setup adjustment, hold the switch pressed for longer than one second.
3. The lamp above the switch lights, and the auto function starts operating.
4. On normal completion of the operation, the lamp will go out.

Manual adjustment

- Apply the output video signal (composite video) of this unit to an oscilloscope or a waveform monitor, and adjust while observing the waveforms.

1. Set the AUTO SET switch Ⓔ to "MANUAL".
2. Adjust the waveform with the R and B GAIN controls Ⓕ. R varies the red channel gain, and B varies the blue channel gain. Adjust the waveform so that the carrier leakage of white is minimum.



Notes:

- Readjust the auto-set every time the light source changes.
- When the lamp above the switch blinks after pressing the AUTO SET switch, this shows that automatic adjustment is not possible. The cause of automatic adjustment error will be indicated in the camera's viewfinder. So remove the cause, and perform the auto setup again. (For display indications, refer to the instructions of the camera.)

5 MASTER BLACK ADJUSTMENT

1. Adjust the black level of the camera's output signal using the MASTER BLACK control Ⓖ.

GENLOCKED OPERATION

It is necessary to set them up as a camera system; however, a simplified adjustment method will be explained here. For details, consult an authorized JVC service agent.

1 PREPARATIONS

1. Connect the remote control units and video cameras correctly referring to the connection diagram on page 5.
2. Set the switches of the video camera and RM-P200 and perform adjustments according to "Basic Operation" 1 to 5 .

2 GENLOCKING

- Adjust the H (horizontal) phases and hues of the two cameras.

1. Set the mode switches Ⓒ of both RM-P200s to "BARS" to output color bars.
2. Apply the output signal of a special effects generator (hereafter called SEG) to the color monitor.
3. Select camera 1 for the input signal of the SEG and observe the preview output on the color monitor. Adjust the H.PHASE control Ⓗ so that a picture image does not move horizontally when switching between direct and effected (PGM) outputs.
4. Adjust the SC PHASE, COARSE switch Ⓘ and the FINE control Ⓙ so that the hues are consistent in the direct and effected outputs.
5. Set the input signal of SEG to camera 2, and repeat items 3 and 4.
6. If color conditions are different between the two cameras when observing the SEG output with the monitor, adjust the CABLE COMPENSATION FINE control Ⓑ.

Note:
This FINE control slightly affects SC phase, so perform above adjustment 4. again.

7. Set the MODE switch Ⓒ to the "CAM" position to finish the preparation.

Note:
For connections and operations of the color video camera, SEG, VTR, etc., refer to relevant instructions.

Genlocking with a VCR playback signal
When genlocking cameras with a video recorder playback signal, it is necessary to incorporate a time base corrector for the following reasons;

1. The video recorder playback signal contains jitter, so the camera locked to the video recorder playback signal produces an inferior picture containing the same jitter.
2. Since the cameras incorporate a vertical contour circuit, the camera video output is accompanied with abnormal horizontal contour signals due to the horizontal frequency offset of the video recorder.
3. Since the burst shape is inferior to the video recorder playback signal, the chroma condition becomes unnatural when viewed on a monitor equipped with ACC (Automatic Chroma Control) through an SEG (Special Effects Generator).

LENS IRIS OPERATION

1 WHEN USING STANDARD LENS

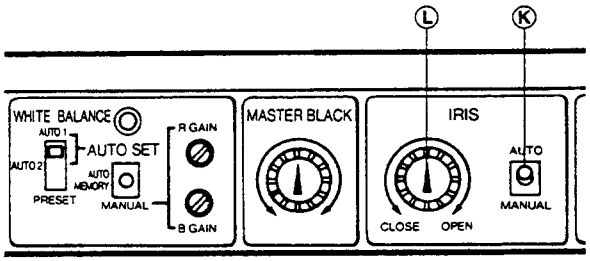
When using the camera with its standard lens, set the iris mode switch provided with the lens to the "A" position.

When using in the auto iris mode

1. Set the IRIS mode switch Ⓚ to "AUTO". The iris is set automatically according to the amount of incident light.

When using in the manual iris mode

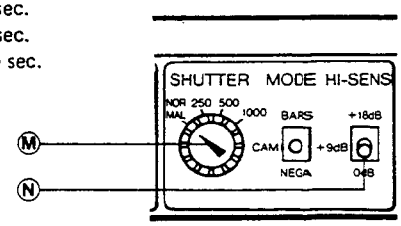
1. Set the IRIS mode switch Ⓚ to "MANUAL". The iris can be varied from CLOSE to OPEN with the IRIS control Ⓛ.



WHEN SHOOTING A FAST-MOVING SUBJECT

- The TV camera's scanning speed is 1/60 sec in terms of a shutter speed; therefore, a picture image is blurred when shooting a fast-moving subject. Set the SHUTTER switch Ⓜ to select the electronic shutter speed on the camera for a more precise analysis of the movement of a fast-moving subject, etc.

NORMAL : 1/60 sec. – Normally set to this position.
250 : 1/250 sec.
500 : 1/500 sec.
1000 : 1/1000 sec.



Note:
When the shutter speed is faster, the sensitivity decreases compared to normal sensitivity.

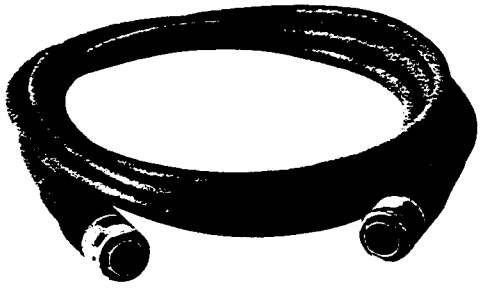
WHEN SHOOTING A DIMLY LIT SUBJECT

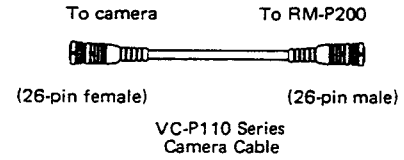
1. Set the HI-SENS switch Ⓝ to increase the sensitivity of the camera to "+9 dB" or "+18 dB".

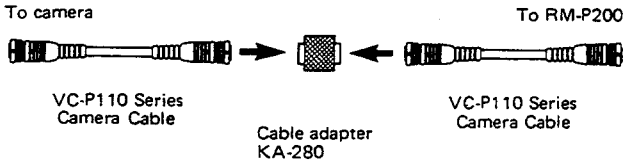
Note:

- When the sensitivity is increased, the video S/N ratio deteriorates compared to normal sensitivity. Normally, use the 0 dB position.

OPTIONAL CAMERA CABLES







- The VC-P110 series camera cables for connecting this unit to the camera include the following 4 types according to cable lengths.
  VC-P110: 5 m VC-P113: 50 m
  VC-P112: 20 m VC-P114: 100 m
- Two VC-P110 series cables can be connected to extend via the cable adapter KA-280.

Note:
The maximum length of the camera cables is 100 m. Do not make it longer than that.

Wiring diagram of VC-P110 series cables (26-pin to 26-pin)

PIN NO.	PIN NO.	SIGNAL	WIRE COLOR
1	1	Composite Video	BROWN
2	2	GND	
3	3	GND	
4	4	G/Y/Y Video	RED
5	5	R/R-Y/C Video	ORANGE
6	6	GND	
7	7	B/B-Y Video	YELLOW
8	8	GND	
9	9	Intercom M (Mic)	BROWN / RED
10	10	Intercom E (Ear)	BROWN / WHITE
11	11	GND	
12	12	Audio L CH	BLACK
13	13	GND	
14	14	SID 1H	RED
15	15	SID 1L	RED / WHITE
16	16	Genlock	VIOLET
17	17	GND	
18	18	Aux Video	GREEN
19	19	GND	
20	20	SID 2H	ORANGE
21	21	NC	
22	22	SID 2L	ORANGE / WHITE
23	23	Audio R CH	WHITE
24	24	GND	
A	A	+14 V DC	BLACK
B	B	GND	WHITE

TROUBLESHOOTING

FAILURE OF VIDEO CIRCUITS

- **Color reproduction is improper on the monitor TV.**
  Is the SC PHASE control adjusted correctly?
- **Synchronization is not possible on the monitor.**
  Is the "MODE" (camera cable select switch - - page 7) on the video camera set to "RM"?
  Is the composite video signal (or black burst signal) applied to the GENLOCK input connector?
  Is the VTR signal used as a reference?
  Is the external reference signal applied?
  Is the external reference signal a normal 2:1 interlaced signal?
- **Synchronization is not possible with the SEG output.**
  Are connections to the SEG input and output terminals correct?
  Is the horizontal (H) phase adjusted?

FAILURE OF CONTROLS

- **Tally lamp does not light.**
  Is the power (6 V AC or 5 – 24 V DC) supplied to the tally input terminal? Also, is the power supply/make-contact select switch inside this unit in a correct position?
- **Intercom communication is not possible.**
  Is the impedance of the headset appropriate? (Earphone: 200 – 600 ohms/1 kHz, Microphone: carbon)
  Is the "MODE" switch (page 7) set to "RM"?
- **The auto setup operation indicator does not light.**
  Is the color temperature of lighting 3200K?
  Is a colored subject being shot?
  Are cables, etc., connected correctly?

SPECIFICATIONS

Output signals

Composite video signal	: 1 Vp-p, 75 Ω x 2
R/G/B signals	: 0.7 Vp-p, 75 Ω x 1 each (without SYNC)
Y/R-Y/B-Y signals	: Y; 1 Vp-p, R-Y; 0.7 Vp-p, B-Y; 0.7 Vp-p, 75 Ω each
Y/C 358 signals (U version)	: Y; 1 Vp-p, 75 Ω, C; 0.286 Vp-p, 75 Ω (burst level)
Y/C 443 signals (E version)	: Y; 1 Vp-p, 75 Ω, C; 0.286 Vp-p, 75 Ω (burst level)
Intercom signal	: Two-wire system, –10 dB, 600 Ω balanced

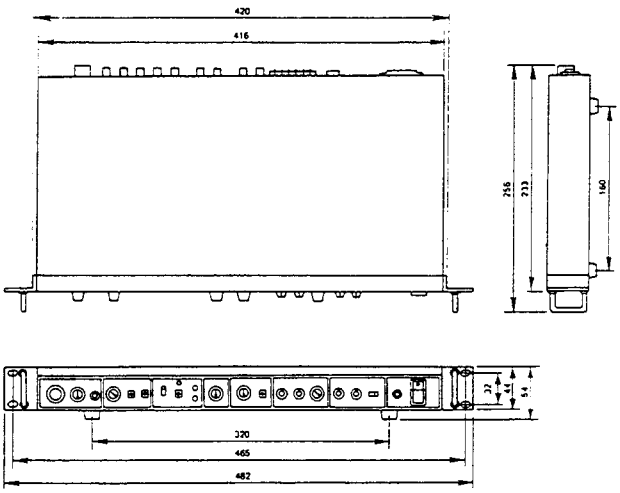
Input signals

Genlock signal	: Composite video signal 1 Vp-p, 75 Ω (Loop-through output) Black burst signal 0.43 Vp-p, 75 Ω (Loop-through output)
AUX signal	: Composite video signal 1 Vp-p, 75 Ω (Loop-through output)
Intercom signal	: Two-wire system, –10 dB, 600 Ω balanced
Tally signal	: Make-contact or power (5–24 V DC or 6 V AC) supply

Others

Power supply	: 120 V AC, 60 Hz (U version) 220 V/240 V AC, 50 Hz (E version)
Power consumption	: 11 W 65 W (with camera and 4" viewfinder)
Weight	: 5 kg (11.1 lbs)
Ambient temperature	: –10°C to +45°C (14°F to 113°F)
Accessory	: Power cord (QMP1C08-250)

Dimensions (mm)



Design and specifications are subject to change without notice.

Revised on Oct. 1990.

JVC

VICTOR COMPANY OF JAPAN, LIMITED

Printed in Japan
SC96353

SECTION 1
DISASSEMBLY

1.1 REMOVAL OF THE TOP COVER

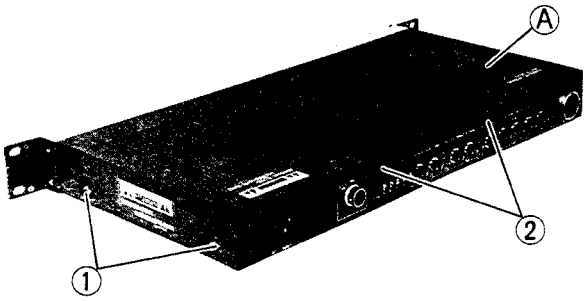


Fig. 1-1

1. Remove four screws ① on the both sides of the top cover Ⓐ.
2. Remove two screws ② on the rear of the top cover.
3. Pull up the top cover to remove it.

1.2 REPLACING THE FUSE

When a fuse is blown, first find the cause of the trouble; the power should be switched on only after replacing the fault.

1. The RM board is as shown in Fig. 1-2 when the top cover is removed following the description in 1.1.

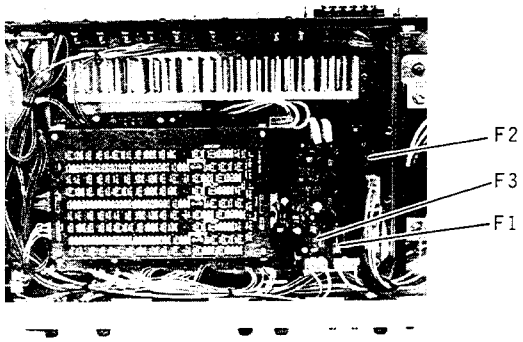


Fig. 1-2

2. Three fuses are provided on the circuit boards.
   :Primary Fuse
   QMF51U1-1R25 ; 1.25 A - 125 V (For U type)
   QMF51A2-R80 ; T800 mA - 250 V (For E type)
   Secondary Fuse
   QMF51U1-4R0 ; 4 A - 125 V (For U type)
   QMF51A2-4R0 ; T4A - 250 V (For E type)
   Secondary Fuse (9 V)
   QMF51U1-R40 ; 400 mA - 125 V (For U type)
   QMF51A2-R40 ; T400 mA - 250 V (For E type)

1.3 REMOVAL OF THE FRONT PANEL

1. Remove the top cover according to the section 1.1.
2. Remove three screws ③ on the bottom frame Ⓑ .

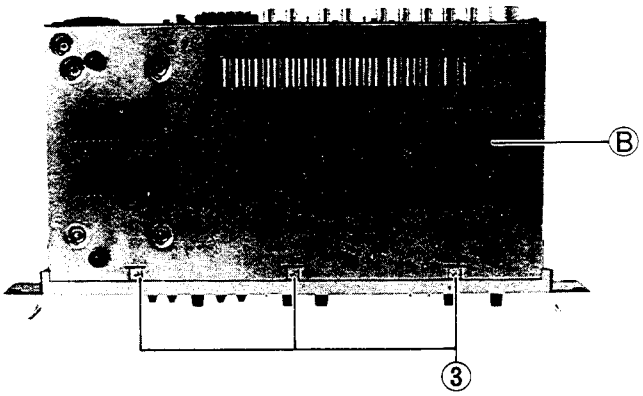


Fig. 1-3

3. Remove a couple of two screws ④ on the both sides. The front panel cannot be completely removed, but can be slid out to forward.

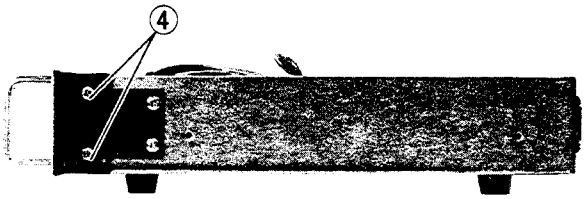


Fig. 1-4

1.4 REMOVAL OF THE CIRCUIT BOARDS

1.4.1 Removal of the RGB board

1. Remove the top cover according to the section 1.1.
2. Pinch the head of four studs Ⓒ, then remove the RGB board from the studs.

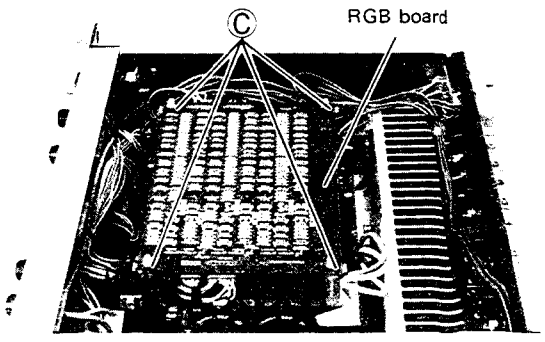


Fig. 1-5

1.4.2 Removal of the RM board

1. Remove six screws ⑤ on the rear panel.

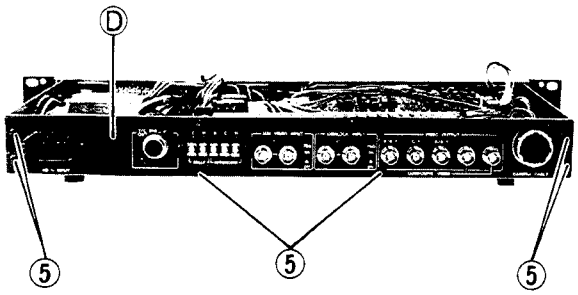


Fig. 1-6

2. Remove five screws ⑥ on the RM board.
3. The RM board can be removed with rear panel.

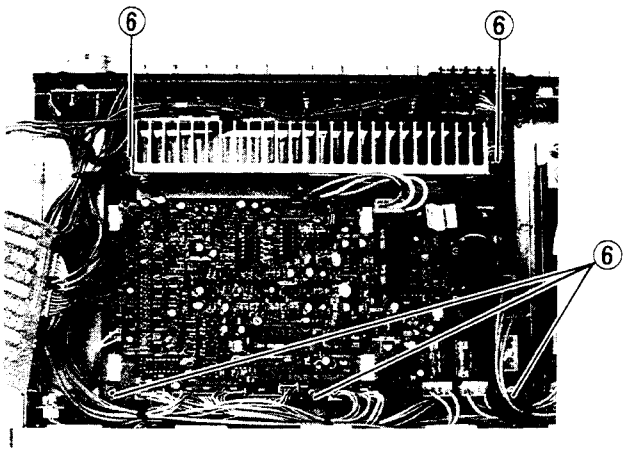


Fig. 1-7

1.4.3 Removal of the FR-1 board

1. Remove the front panel according to the section 1.3.
2. Remove the five knobs Ⓔ.

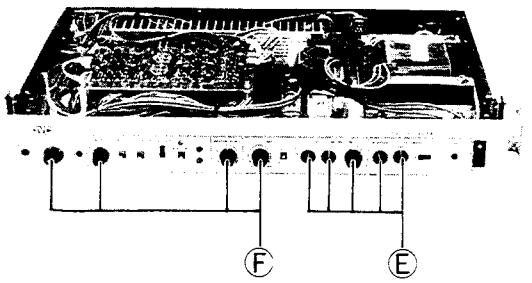


Fig. 1-8

3. Remove four screws ⑦ on the FR-1 board.

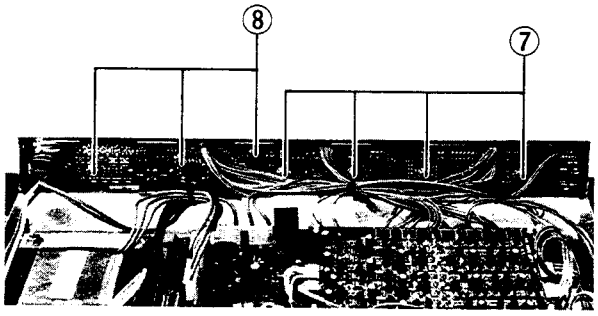


Fig. 1-9

1.4.4 Removal of the FR-2 board

1. Remove the front panel according to the section 1.3.
2. Remove the four knobs Ⓕ (refer to Fig. 1-8).
3. Remove three screws ⑧ on the FR-2 board.

1.5 ATTACHING THE FR-1/FR-2 BOARD

When attaching the FR-1 (or FR-2) board to the front panel, set the position of the rotary switch (SHUTTER on the FR-1 board, CABLE LENGTH on the FR-2 board) according to the following procedure.

1. Set the mark "O" of the rotary switch to the position "5".

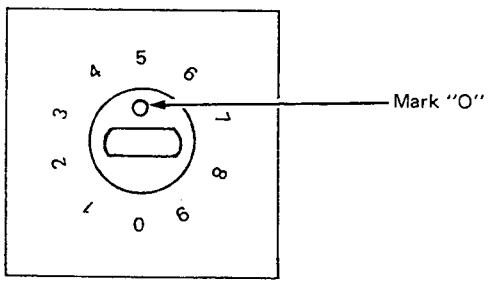


Fig. 1-10

2. Attach the knob adapter so that the number 3, 4 and 5 are covered with the knob adapter.

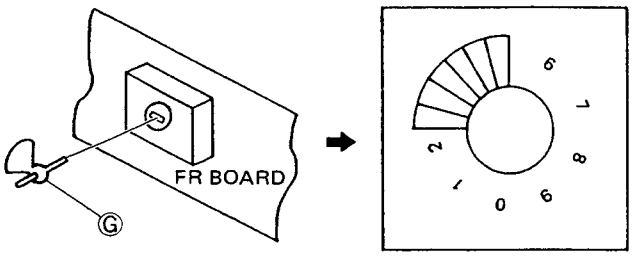


Fig. 1-11

3. Attach the circuit board to the front panel, then attach the knob.

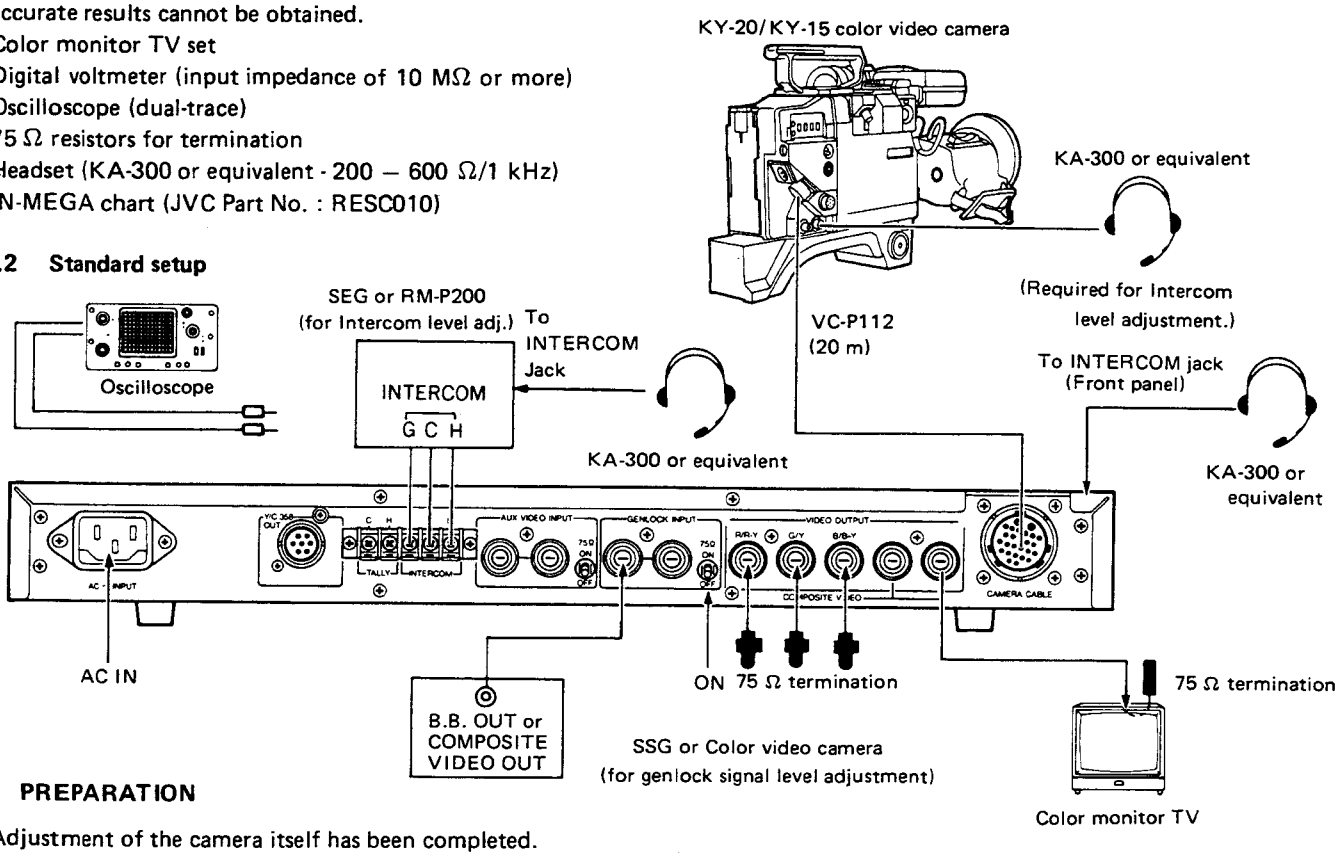
SECTION 2
ELECTRICAL ADJUSTMENT

2.1 REQUIRED EQUIPMENT AND SETUP FOR ADJUSTMENT

2.1.1 Necessary equipment

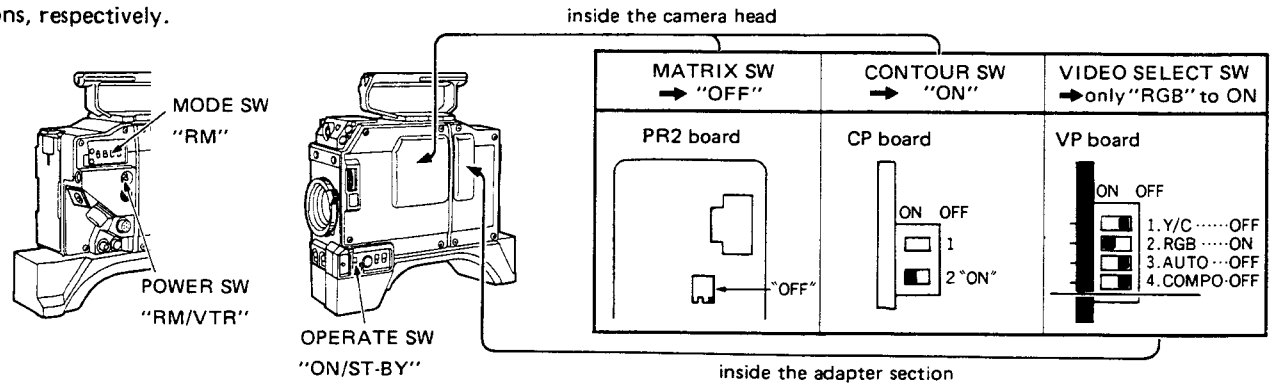
1. KY-20 or KY-15 color video camera
2. Camera cable VC-P112 (20 m)*
   *Make sure to use a camera cable of 20 m long, otherwise accurate results cannot be obtained.
3. Color monitor TV set
4. Digital voltmeter (input impedance of 10 MΩ or more)
5. Oscilloscope (dual-trace)
6. 75 Ω resistors for termination
7. Headset (KA-300 or equivalent - 200 – 600 Ω/1 kHz)
8. IN-MEGA chart (JVC Part No. : RESC010)

2.1.2 Standard setup

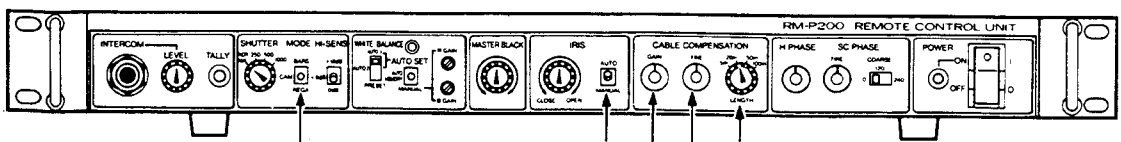


2.2 PREPARATION

- Adjustment of the camera itself has been completed.
- For lighting, refer to descriptions on camera adjustment.
- Camera's switches should be set at the following positions, respectively.



- Settings on RM-P200's front panel are as follow:

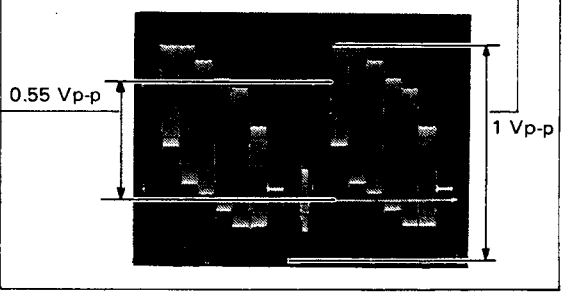


No.	Item	Measuring instruments	Measuring point (◎) Adjustment parts (ⓣ) Adjustment level (☆)	Adjustment procedure

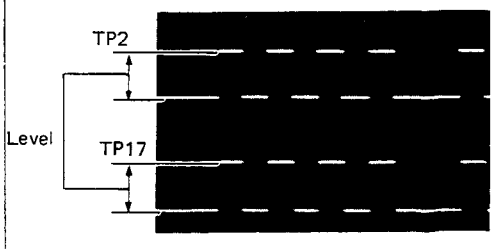
2.3 ADJUSTMENT OF POWER SUPPLIES (RM board)

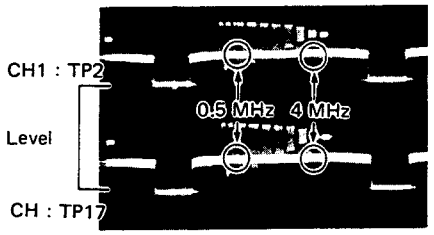
1	+14 V DC power supply	Digital voltmeter	◎ TP6 ⓣ R80 (14 V ADJ) ☆ +14 V DC	1) Turn on the power switch of RM-P200. 2) Adjust VRs to obtain the specified voltage respectively.
2	+9 V DC power supply	Digital voltmeter	◎ TP7 ⓣ R88 (9 V ADJ) ☆ +9 V DC	

2.4 ADJUSTMENT OF COMPOSITE SIGNAL OUTPUT (RM board)

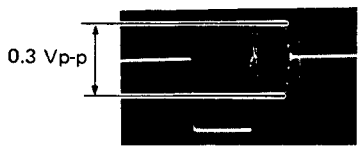
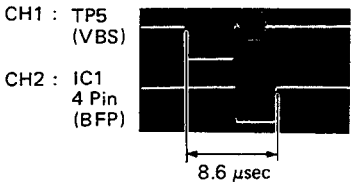
1	Adjusting video level	Oscilloscope (10 : 1, H-rate)	◎ TP1 ⓣ R141 (GAIN ADJ) ☆ 0.55 Vp-p ⓣ C103 (F. RESPONSE) ☆ 1 Vp-p	1) Observing an oscilloscope, adjust R141 to obtain the specified output level. 2) Observing an oscilloscope, adjust C103 to obtain the specified output level. 

2.5 ADJUSTMENT OF COMPONENT SIGNAL OUTPUT (RGB board)

1	Adjusting output level	Oscilloscope (10 : 1, H-rate)		• R/G/B OUT terminals (Rear panel) : Terminated with 75 Ω resistors • KY-20/KY-15 VP board (inside adapter) : Extension board is substituted for it.
			R channel ◎ TP2 [RGB board] → 1-ch of oscilloscope ◎ TP17 [Camera's' extension board] → 2-ch of oscilloscope ⓣ R240 (R GAIN) [RGB board]	1) Connection between test points and the oscilloscope: 2) Adjust R240 so that levels of ch-1 and ch-2 coincide with each other.  R-channel
			G channel ◎ TP3 [RGB board] ◎ TP18 [Camera's' extension board] ⓣ R340 (G GAIN) [RGB]	3) Adjust levels of G and B channels respectively in the same manner as the above steps 1) and 2) for R channel.
			B channel ◎ TP4 [RGB board] ◎ TP19 [Camera's' extension board] ⓣ R440 (B GAIN) [RGB]	

No.	Item	Measuring instruments	Measuring point (◎) Adjustment parts (ⓣ) Adjustment level (☆)	Adjustment procedure
2	Frequency response	Oscilloscope (10 : 1, H-rate)	**R channel** ◎ TP2 [RGB board] ——→ CH1 of oscilloscope ◎ TP17 [Camera's' extension board] ——→ CH2 of oscilloscope ⓣ C214 (R F. RESPONSE) [RGB board]	4) Set the MODE switch (Front panel) to "CAM". 5) Shoot the IN MEGA chart for just scan. 6) Oscilloscope connection: 7) Confirm that the levels of 0.5 MHz portions of the both channels coincide with each other. If there is a difference, adjust the higher level to the lower by use of the oscilloscope's calibrator. 8) Coincide levels of two channels of 4 MHz portions with each other.  R channel
			G channel ◎ TP3 [RGB board] ◎ TP18 [Camera's' extension board] ⓣ C314 (G F. RESPONSE) [RGB board]	9) Adjust levels for G and B channels respectively in the same manner as the above procedure for R channel.
			B channel ◎ TP4 [RGB board] ◎ TP19 [Camera's' extension board] ⓣ C414 (B F. RESPONSE) [RGB board]	

2.6 ADJUSTMENT OF GEN-LOCK SIGNAL LEVEL (RM board)

No.	Item	Measuring instruments	Measuring point (◎) Adjustment parts (ⓣ) Adjustment level (☆)	Adjustment procedure
1	Burst level	Oscilloscope (10 : 1, H-rate)	◎ GENLOCK terminal of color video camera ⓣ BURST LEVEL (R31) ☆ 0.3 Vp-p	1) Supply B.B. or VBS signal to the GENLOCK IN terminal (rear panel) of RM-P200. 2) Adjust R31 to obtain the specified signal level. 
2	Burst flag pulse		◎ TP5 ——→ Oscilloscope's CH1 ◎ IC1 pin 4 ——→ Oscilloscope's CH2 ⓣ R15 (BF WIDTH) ☆ 8.6 μsec	1) Oscilloscope connection: 2) Adjust the rise-up time of BFP (burst flag pulse) to be 8.6 μsec as shown in the figure below. 

No.	Item	Measuring instruments	Measuring point (◎) Adjustment parts (Ⓣ) Adjustment level (☆)	Adjustment procedure

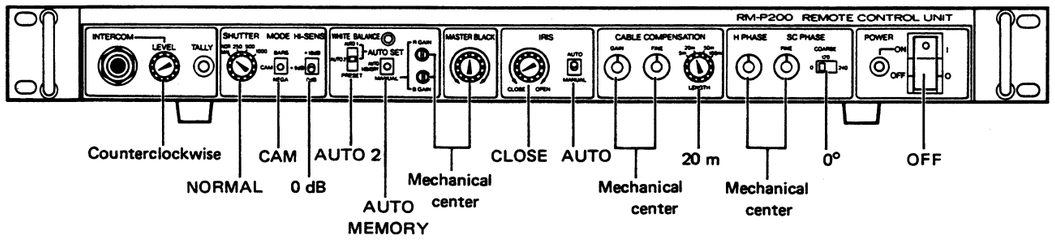
2.7 ADJUSTMENT OF INTERCOM LEVEL (RM board)

When a specified head set is used, volume can be controlled with the following control knobs.
CAMERA operator's side : INCOM control knob on the rear adapter of KY-20/KY-15
RM-P200 operator's side : INTERCOM LEVEL control knob on the RM-P200's front panel
Therefore, adjustment of the board is not required generally, however, perform the following procedure in the case of insufficient gain.

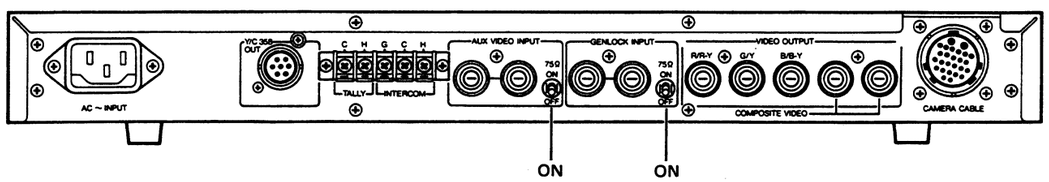
1	Intercom level (Camera side)	Headset	◎ INCOM jack of Color video camera Ⓣ R64 (CAM EAR)	1) Speaking between the camera and RM-P200, adjust R64 to obtain appropriate level.
2	Intercom level (SEG side)		◎ INTERCOM jack of SEG, etc. Ⓣ R54 (R EAR)	1) Speaking between the camera and RM-P200, adjust R54 to obtain appropriate level.
3	Side tone (Voice feedback to earphone of the same headset)		◎ INTERCOM jack on RM-P200's front panel Ⓣ R55 (SIDE TONE)	1) Speaking between the camera and RM-P200, adjust R55 to obtain appropriate level.

2.8 PRESET POSITIONS OF SWITCHES AND CONNECTORS AT SHIPMENT

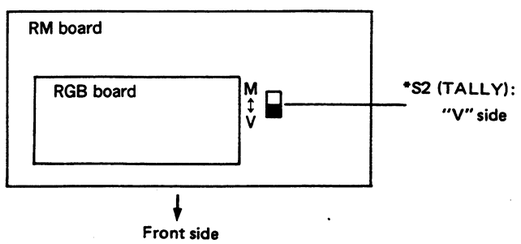
- **Front panel**



- **Rear panel**

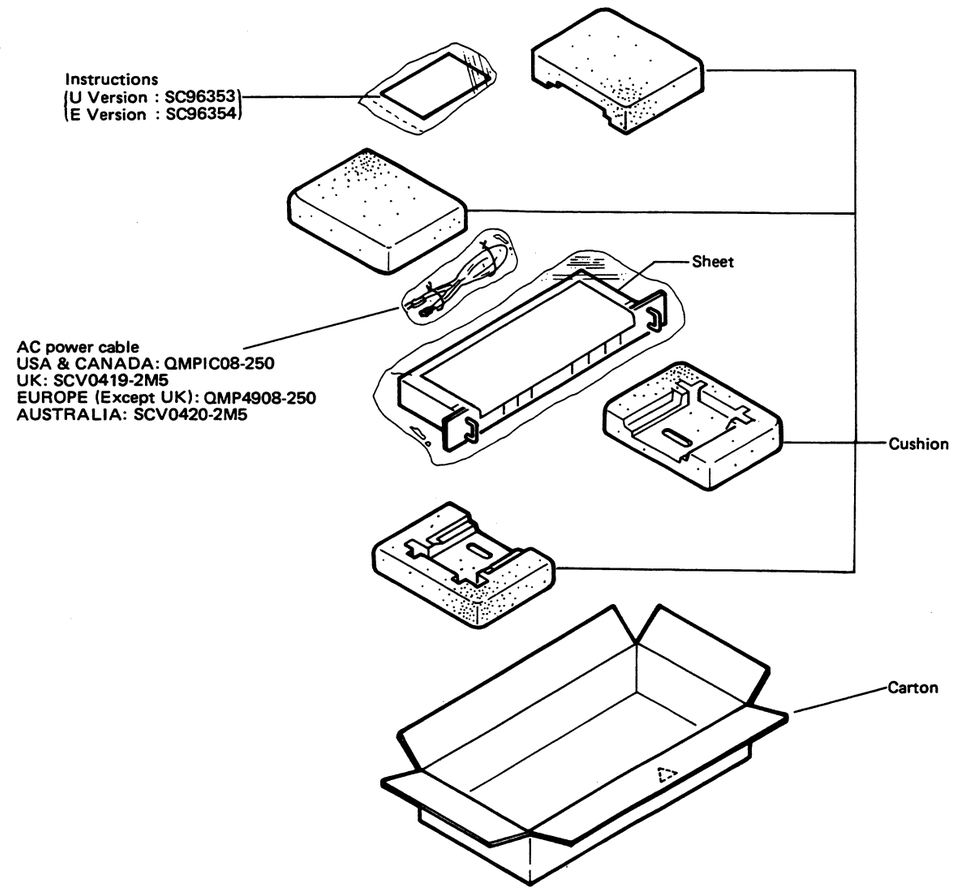


- **RM board**



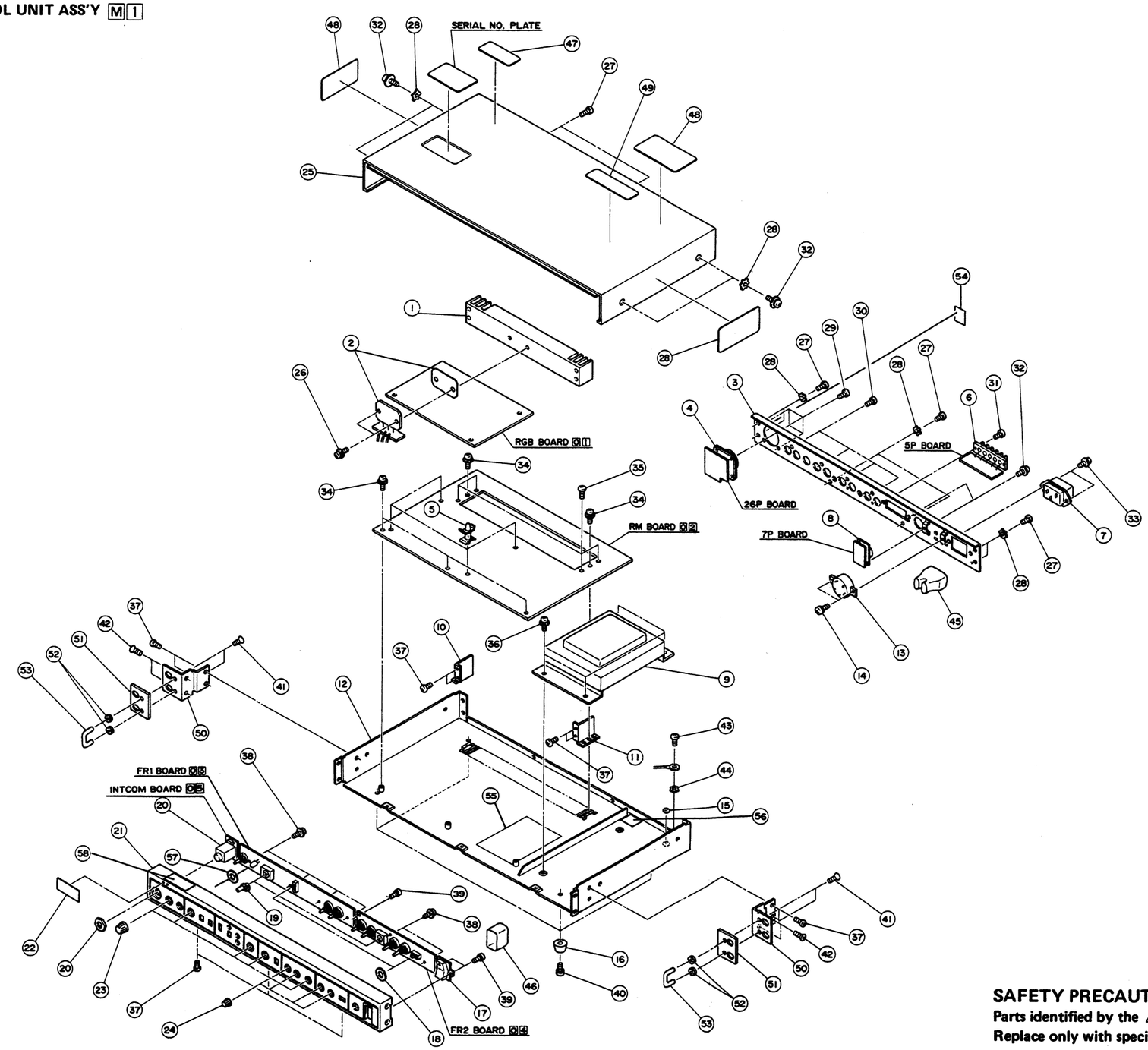
*S2 (TALLY)
Connector switch for the tally signal input system (power supply system or through the contact point system).
This is changeable to meet the signal supply system of the external equipment connected to the TALLY terminal of the rear panel.
M : for Through the contact point system
V : for Power supply system (5–24 V DC or 6 V AC)

SECTION 3
REPACKING



SECTION 4
EXPLODED VIEW AND PARTS LIST

4.1 REMOTE CONTROL UNIT ASS'Y M1



SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety.
Replace only with specified part numbers.

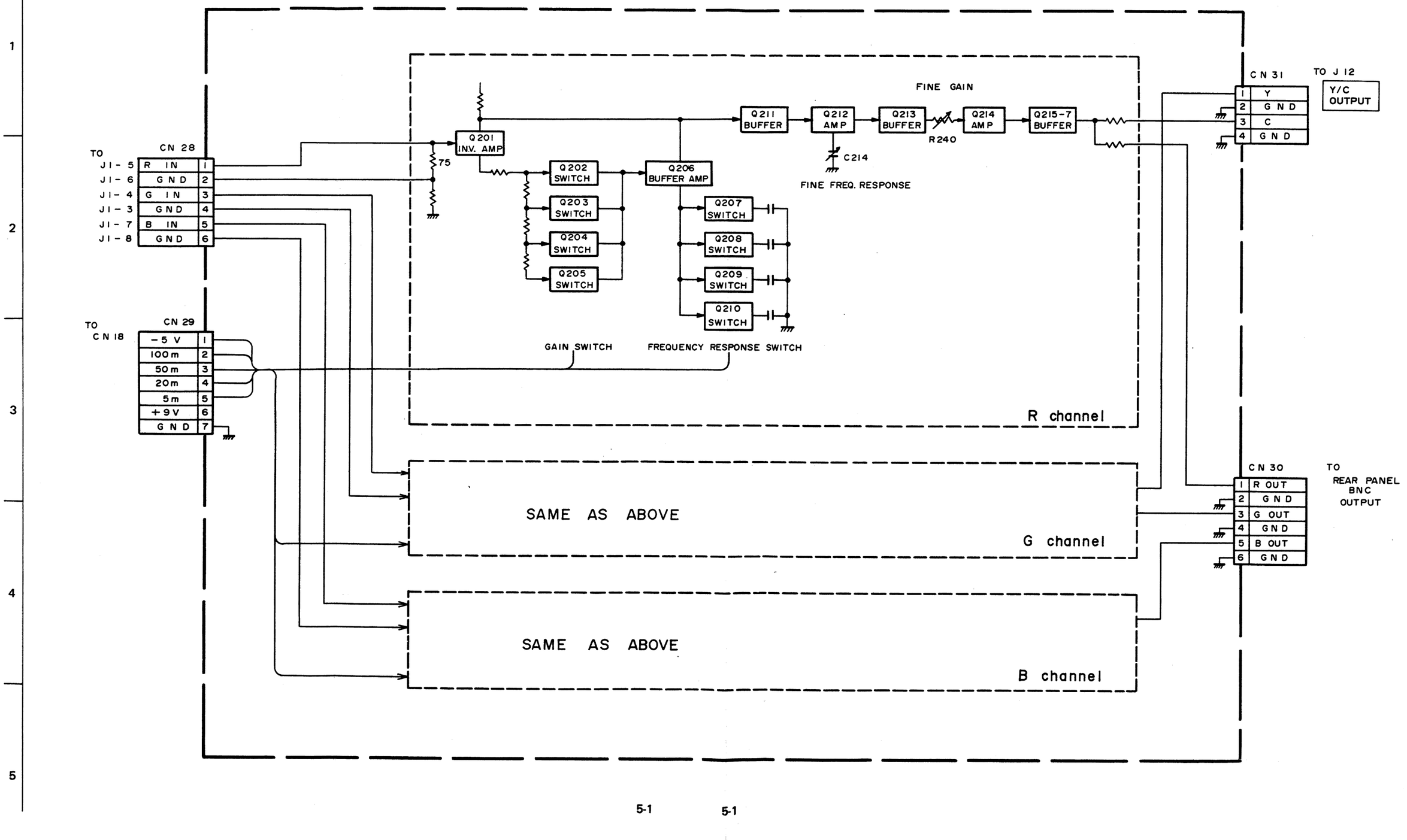
– Remote control unit assembly list –

M1MM□□□□

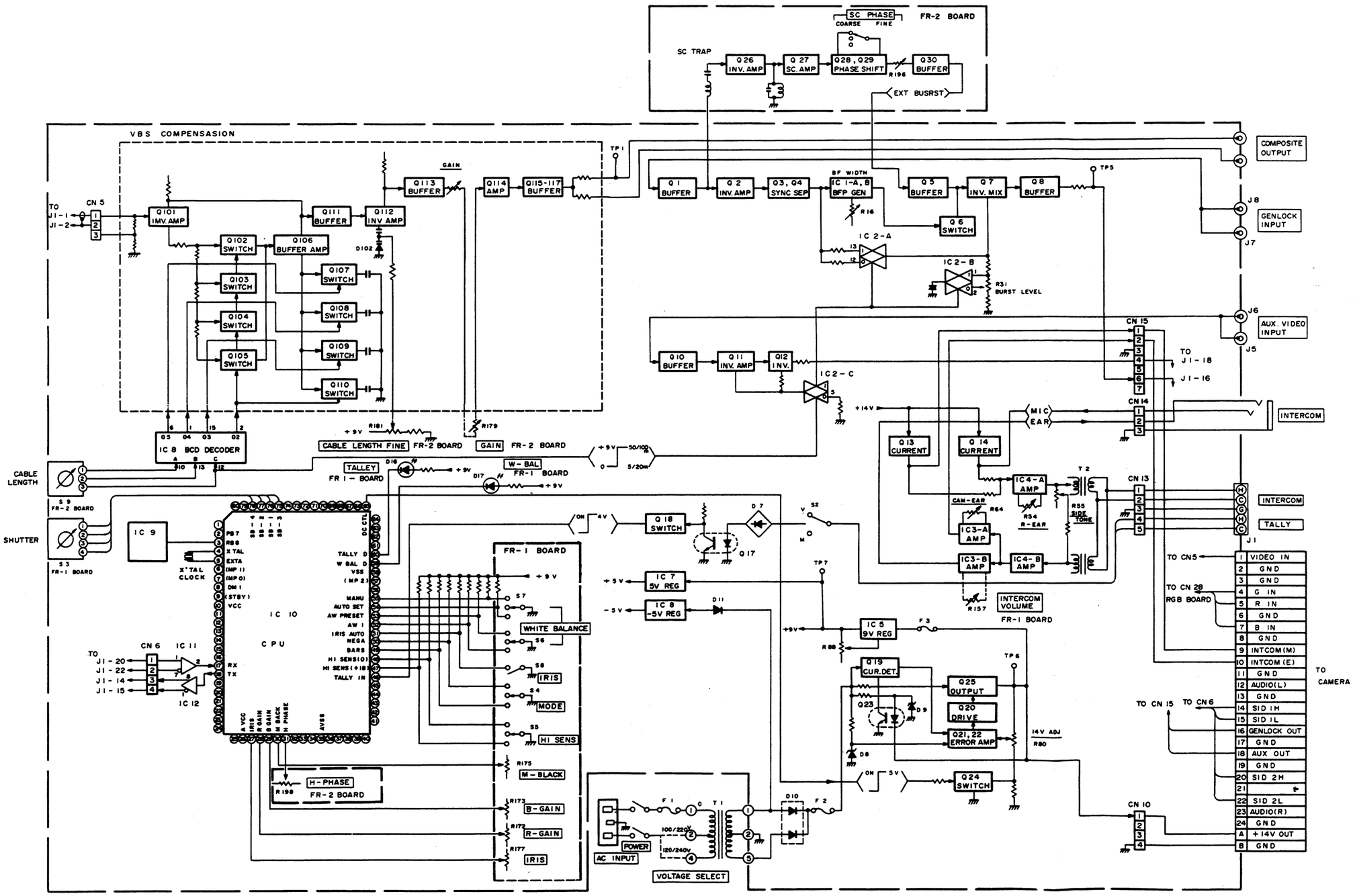
Symbol No.	Part No.	Part Name	Description
1	SCV0272-003	Heat Sink	
⚠ 2	2SB755	Transistor	inclueds mica sheet (Q25)
3	SC20335-001	Rear Panel	For "U" version
	SC20335-002	Rear Panel	For "E" version
⚠ 4	SCV1245-26S	Connector	26 pin CAMERA CABLE
5	SM40463-001	Stud	
6	SCV1270	Terminal	5 pin TALLY/INTERCOM
⚠ 7	QMCB002-001	Socket	
8	SCV1214-002	Connector	7 pin Y/C OUTPUT (J12)
⚠ 9	SCV1267-001	Power Trans	For "U" version (T1)
⚠	SCV1268-001	Power Trans	For "E" version (T1)
10	SC43434-00R	Bracket	Right
11	SC43434-00L	Bracket	Left
12	SC10072-001	Bottom Frame	
⚠ 13	QSR0074-003-BS	Rotary Switch	"E" version (Voltage Selecter)
14	LPSP3008Z	Screw	"E" version
15	SC40855-001	Earth Label	
16	QZF1510-001	Foot	
⚠ 17	QSE2A21-S03	Power Switch	
18	SC40392-003	Spacer	
19	SC42026-001	Adapter	
20	SCV0632-001	Jack	INTERCOM
21	SC10071-002	Front Panel	
22	–	JVC Logo Mark	QPGD30011-3
23	SC41188-001	Knob	INTERCOM, SHUTTER, MARTER BLACK, IRIS, CABLE LENGTH
24	SC40917-002	Knob	CABLE COMP GAIN, FINE, H PHASE, SC PHASE
25	SC31038-002	Top Cover	
26	DPSP3010Z	Screw	M3 × 10
27	SBST3006M	Screw	M3 × 6
28	WBS3000M	Washer	
29	SDSP3008M	Screw	M3 × 8
30	SBSF3008M	Screw	M3 × 8
31	SDSP3010M	Screw	M3 × 10
32	DPSP3006M	Screw	M3 × 6
33	DPSP3008M	Screw	M3 × 8
34	DPSP3008Z	Screw	M3 × 8
35	SBST3005Z	Screw	M3 × 5
36	DPSP4008Z	Screw	M4 × 8
37	SDSP3006R	Screw	M3 × 6
38	DPSP3006Z	Screw	M3 × 6
39	LPSP3006Z	Screw	M3 × 6
40	LPSP3010Z	Screw	M3 × 10
41	SSSP2608N	Screw	M 2.6X8 Serial No.□□□ 50001 to □□□ 50030 of U version
	SSSP3008N	Screw	M3X8 E version and Serial No.□□□ 50001 and after of U version
42	SSSP3010N	Screw	M3 × 10
43	DPSP4008Z	Screw	M4 × 8
44	WBS3000N	Washer	
⚠ 45	SCV0801-001	Socket Cover	
⚠ 46	SCV1327-001	Switch Cover	
⚠ 47	SC40865-001	Warning Lavel	
⚠ 48	SC40341-001	Caution Lavel	
⚠ 49	SC40653-001	Warning Lavel	"EA" type only
50	SC30558-001	Bracket	
51	SC41550-003	Plate	
52	SC40617-001	Washer	
53	SC40593-001	Handle	Serial No.□□□ 50001 to □□□ 50030 of U version
	SC43639-001	Handle	E version and Serial No.□□□ 50031 and after of U version
54	SC41957-012	Caution Label	"U" version
⚠ 55	SC43692-001	Sheet	
⚠ 56	SC41252-001	Caution Label	
57	SC43656-085	LED Spacer	
⚠ 58	QZL1001-006	Label	U version only

SECTION 5
CHARTS AND DIAGRAMS

5.1 RGB BOARD BLOCK DIAGRAM

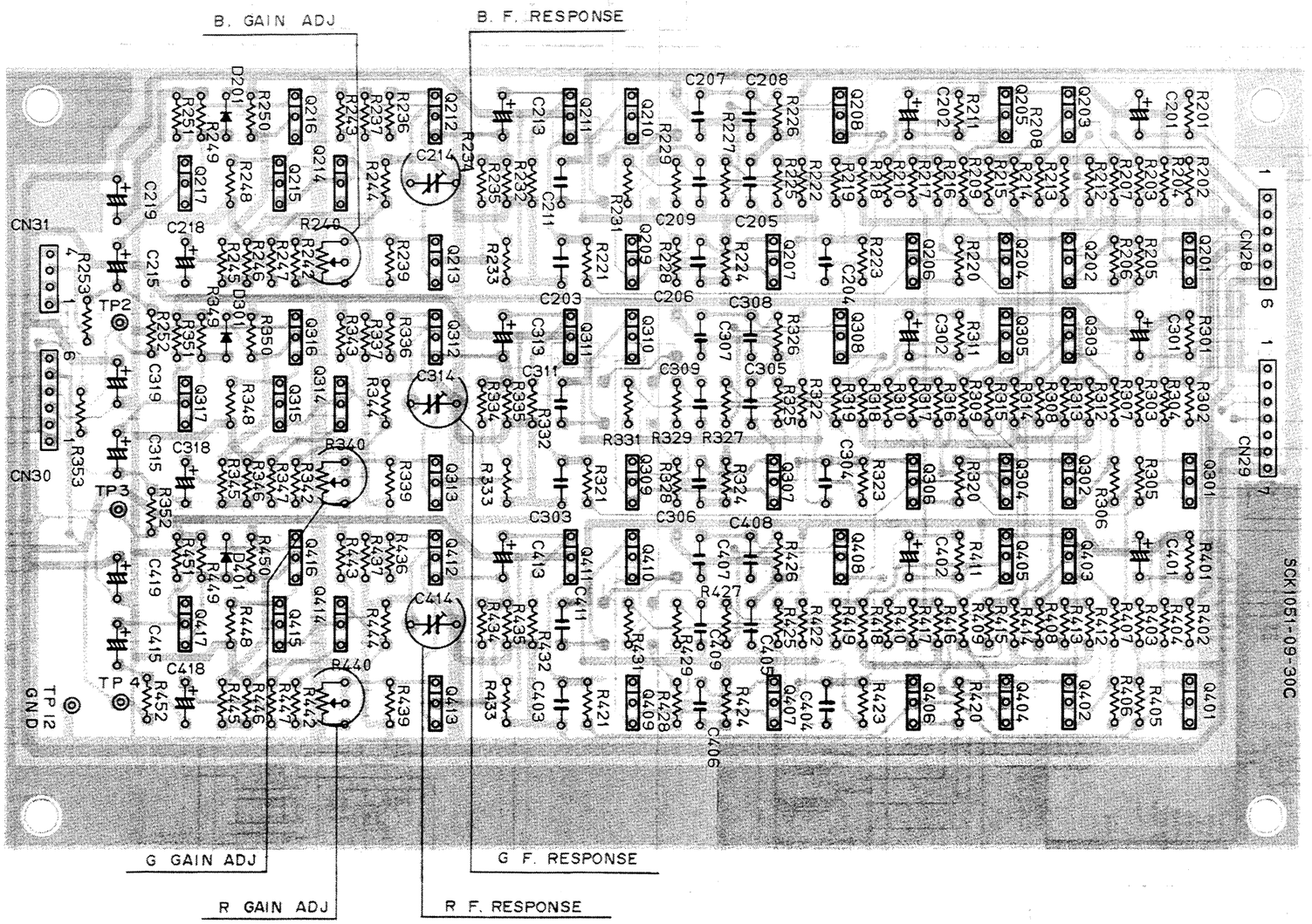


5.2 RM/FR-1/FR-2/INTCOM BOARD BLOCK DIAGRAM



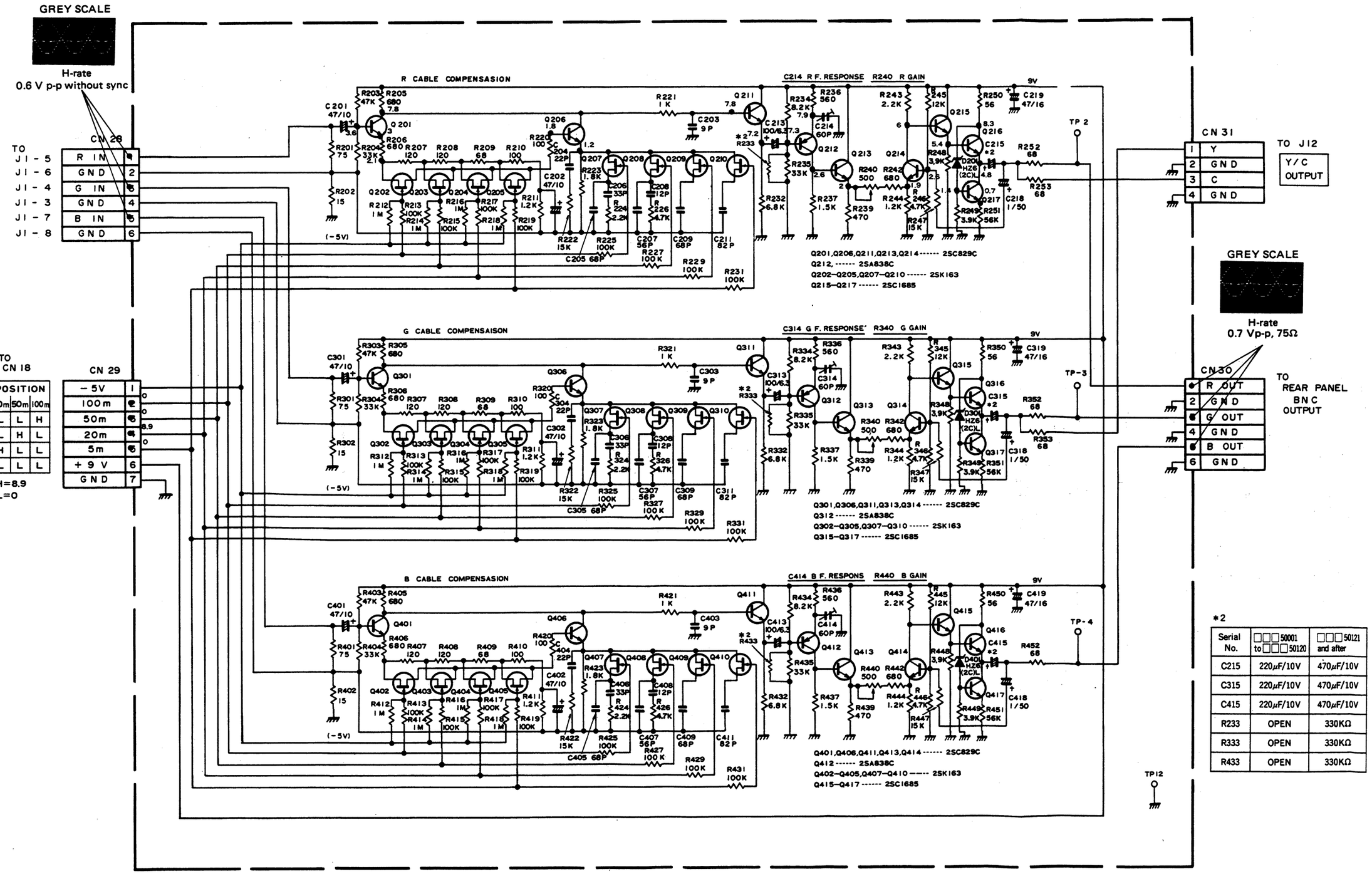
Revised on Oct. 1990.

5.3 RGB CIRCUIT BOARD



5-3

5.4 RGB BOARD SCHEMATIC DIAGRAM

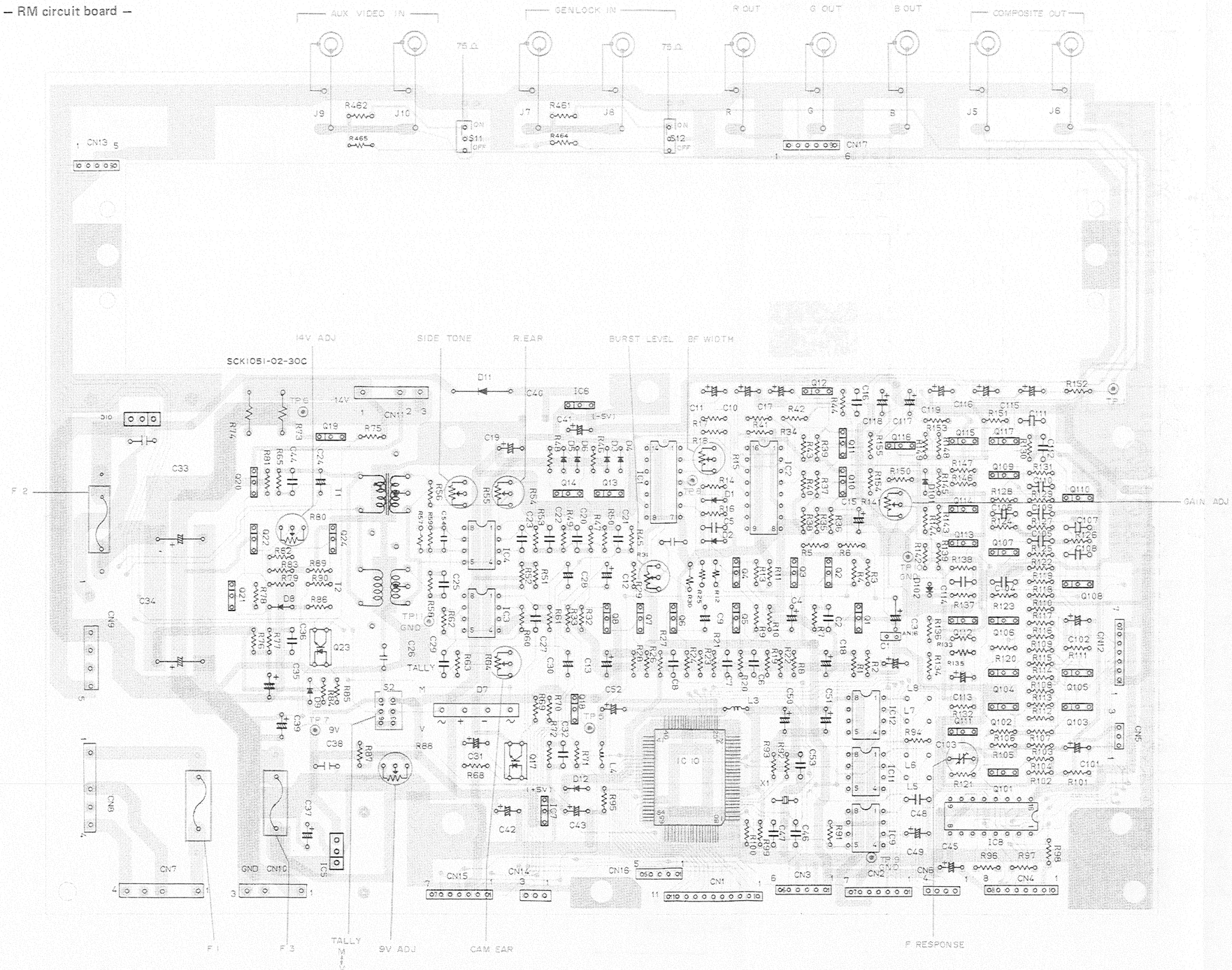


*2

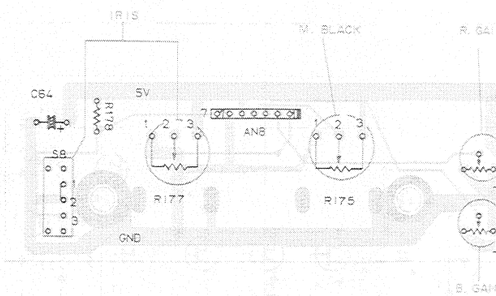
Serial No.	□□□50001 to □□□50120	□□□50121 and after
C215	220μF/10V	470μF/10V
C315	220μF/10V	470μF/10V
C415	220μF/10V	470μF/10V
R233	OPEN	330KΩ
R333	OPEN	330KΩ
R433	OPEN	330KΩ

5.5 RM/FR-1/FR-2/INTCOM CIRCUIT BOARDS

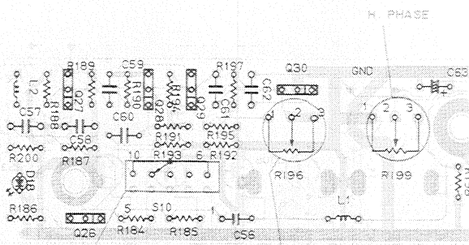
— RM circuit board —



— FR-1 circuit board —

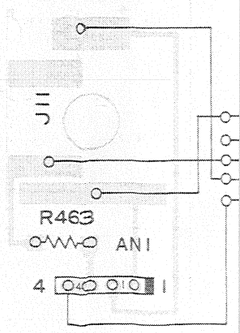


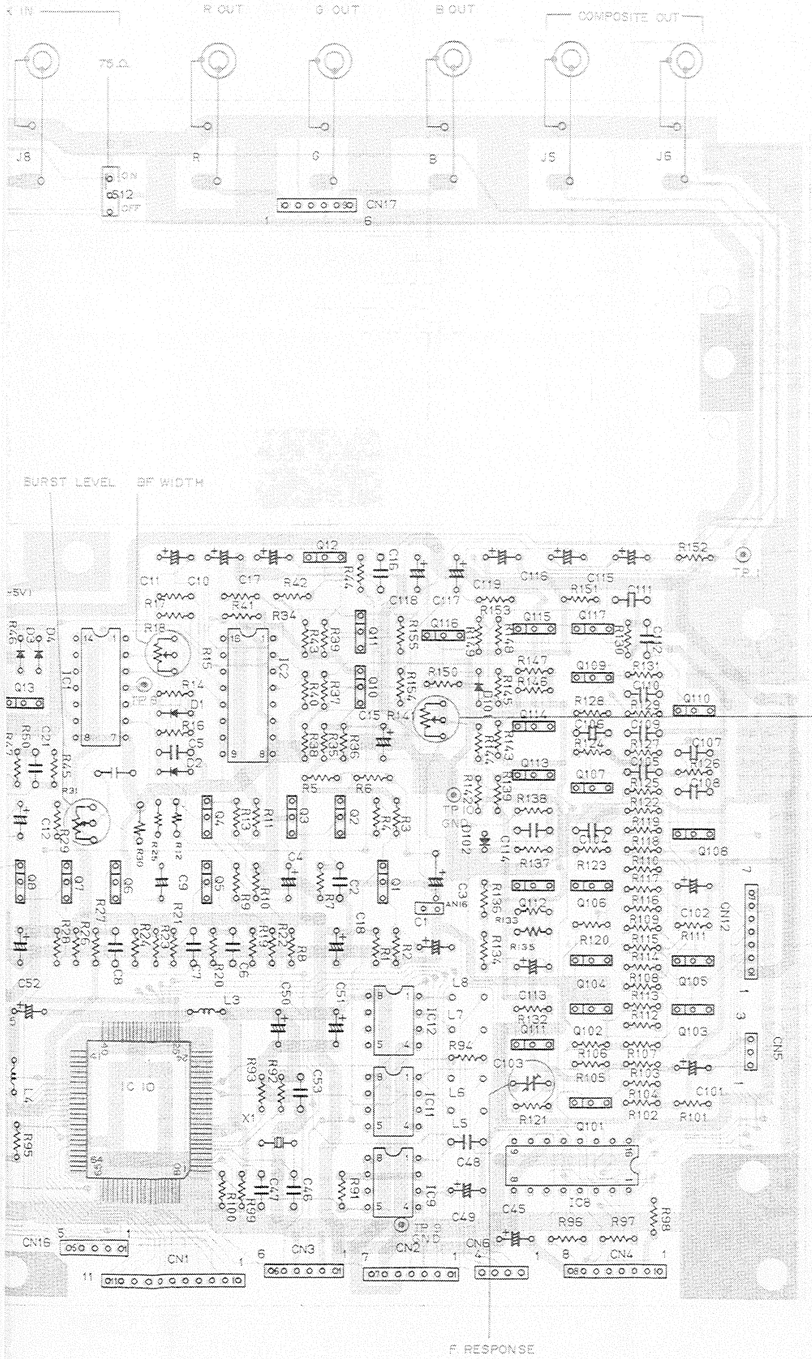
— FR-2 circuit board —



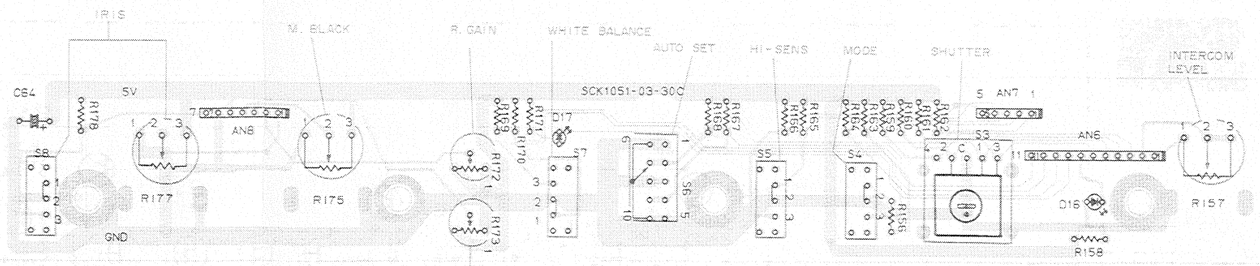
— INTCOM circuit board —

SCK1051-06-00C

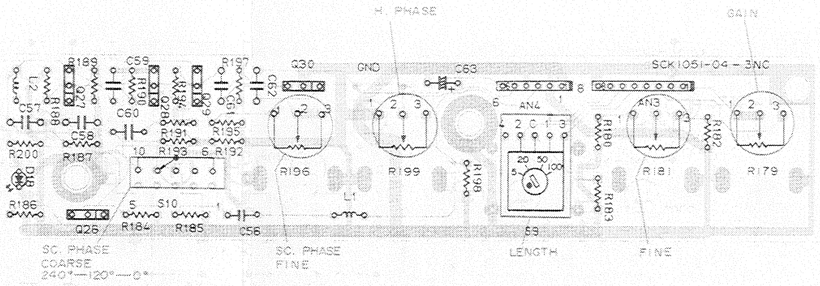




– FR-1 circuit board –

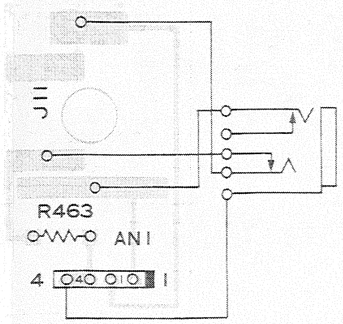


– FR-2 circuit board –



– INTCOM circuit board –

SCK1051-06-00C



5.6 RM/FR-1/FR-2/INTCOM SCHEMATIC DIAGRAM

*3, *4, *5, THESE CIRCUITS ARE PROVIDED SERIAL No. □□□50001 TO □□□50120.

COLOR BARS
H-rate

COLOR BARS
H-rate
1 Vp-p

Genlock signal:
Color bars
H-rate

Genlock signal:
Color bars
H-rate
0.8 Vp-p

Q4: Separated sync
TP8: burst Flug Pulse
Q4
TP8
H-rate
0.8 Vp-p

GENLOCK OUTPUT SIGNAL
(TO CAMERA)
H-rate
0.45 Vp-p

GENLOCK INPUT SIGNAL
(Color bars)
H-rate
1 Vp-p

CLOCK
500ns/div
2 Vp-p

J 1
26P CONNECTOR
SOLDER SIDE

*2

Serial No.	□□□50001 to □□□50120	□□□50021 and after
R464	OPEN	10kΩ
R465	OPEN	10kΩ
C54	OPEN	0.001μF
TP8 TP9 TP10 TP11	NONE	PRO-VIDED

*6

Serial No.	□□□50001 to □□□50020	□□□50021 and after
C115	220μF/10V	470μF/10V
C116	220μF/10V	470μF/10V

Replacing shaded ( ) parts in the schematics, be sure to the parts specified for safety purposes.

Revised on Oct. 1990.

SECTION 6
ELECTRICAL PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers. For maximum reliability and performance, all other replacement parts should be identical to those specified.

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS:

RESISTORS — All resistance values are in ohms (Ω).

K	:	1 000
M	:	1 000 000
CR	:	Carbon Resistor
Comp. R	:	Composition Resistor
WR	:	Wire Wound Resistor
OMR	:	Oxide Metal Film Resistor
VR	:	Variable Resistor (Potentiometer)
MFR	:	Metal Film Resistor
FR	:	Fusible Resistor

CAPACITORS — All capacitance values are in μF, unless otherwise indicated.

P	:	μμF
C Cap	:	Ceramic Capacitor
E Cap	:	Electrolytic Capacitor
FM Cap	:	Film Mica Capacitor
MM Cap	:	Metalized Mylar Capacitor
MP Cap	:	Metalized Paper Capacitor
MY Cap	:	Mylar Capacitor
NP Cap	:	Non-polar Capacitor
PC Cap	:	Polycarbonate Capacitor
PP Cap	:	Poly Pro Capacitor
PS Cap	:	Polystyrol Capacitor
T Cap	:	Tantalum Capacitor
TR Cap	:	Trimmer Capacitor

*1. These parts are provided from serial No. □□□ 50001 to □□□ 50020.
*2. These parts are provided from serial No. □□□ 50021 and after.
*3. These parts are provided from serial No. □□□ 50001 to □□□ 50120.
*4. These parts are provided from serial No. □□□ 50121 and after.

6.1 RGB BOARD assembly [0][1] [0][1]□□□□□□

Symbol No.	Part No.	Part Name	Description
Q201	2SC829(C)	Transistor	MATSUSHITA
Q202	2SK163(M.N)	F.E.T.	NEC
Q203	2SK163(M.N)	F.E.T.	NEC
Q204	2SK163(M.N)	F.E.T.	NEC
Q205	2SK163(M.N)	F.E.T.	NEC
Q206	2SC829(C)	F.E.T.	MATSUSHITA
Q207	2SK163(M.N)	F.E.T.	NEC
Q208	2SK163(M.N)	F.E.T.	NEC
Q209	2SK163(M.N)	F.E.T.	NEC
Q210	2SK163(M.N)	F.E.T.	NEC
Q211	2SC829(C)	Transistor	MATSUSHITA
Q212	2SA838(C)	Transistor	MATSUSHITA
Q213	2SC829(C)	Transistor	MATSUSHITA
Q214	2SC829(C)	Transistor	MATSUSHITA
Q215	2SC1685(R.S)	Transistor	MATSUSHITA
Q216	2SC1685(R.S)	Transistor	MATSUSHITA
Q217	2SC1685(R.S)	Transistor	MATSUSHITA
Q301	2SC829(C)	Transistor	MATSUSHITA
Q302	2SK163(M.N)	F.E.T.	NEC
Q303	2SK163(M.N)	F.E.T.	NEC
Q304	2SK163(M.N)	F.E.T.	NEC
Q305	2SK163(M.N)	F.E.T.	NEC
Q306	2SC829(C)	F.E.T.	MATSUSHITA
Q307	2SK163(M.N)	F.E.T.	NEC
Q308	2SK163(M.N)	F.E.T.	NEC
Q309	2SK163(M.N)	F.E.T.	NEC
Q310	2SK163(M.N)	F.E.T.	NEC
Q311	2SC829(C)	Transistor	MATSUSHITA
Q312	2SA838(C)	Transistor	MATSUSHITA
Q313	2SC829(C)	Transistor	MATSUSHITA
Q314	2SC829(C)	Transistor	MATSUSHITA
Q315	2SC1685(R.S)	Transistor	MATSUSHITA
Q316	2SC1685(R.S)	Transistor	MATSUSHITA
Q317	2SC1685(R.S)	Transistor	MATSUSHITA
Q401	2SC829(C)	Transistor	MATSUSHITA
Q402	2SK163(M.N)	F.E.T.	NEC
Q403	2SK163(M.N)	F.E.T.	NEC
Q404	2SK163(M.N)	F.E.T.	NEC
Q405	2SK163(M.N)	F.E.T.	NEC
Q406	2SC829(C)TA	Transistor	MATSUSHITA
Q407	2SK163(M.N)	F.E.T.	NEC
Q408	2SK163(M.N)	F.E.T.	NEC
Q409	2SK163(M.N)	F.E.T.	NEC
Q410	2SK163(M.N)	F.E.T.	NEC
Q411	2SC829(C)	Transistor	MATSUSHITA
Q412	2SA838(C)	Transistor	MATSUSHITA
Q413	2SC829(C)	Transistor	MATSUSHITA
Q414	2SC829(C)	Transistor	MATSUSHITA
Q415	2SC1685(R.S)	Transistor	MATSUSHITA
Q416	2SC1685(R.S)	Transistor	MATSUSHITA
Q417	2SC1685(R.S)	Transistor	MATSUSHITA
D201	HZ6(2C)L	Zener Diode	HITACHI 6 V
D301	HZ6(2C)L	Zener Diode	HITACHI 6 V
D401	HZ6(2C)L	Zener Diode	HITACHI 6 V

Symbol No.	Part No.	Part Name	Description
R201	QRV141F-75R0AY	MFR	75 1/4 W
R202	QRD161J-150	CR	15 1/6 W
R203	QRD161J-473	CR	47 K 1/6 W
R204	QRD161J-333	CR	33 K 1/6 W
R205	QRD161J-681	CR	680 1/6 W
R206	QRD161J-681	CR	680 1/6 W
R207	QRD161J-121	CR	120 1/6 W
R208	QRD161J-121	CR	120 1/6 W
R209	QRD161J-680	CR	680 1/6 W
R210	QRD161J-101	CR	100 1/6 W
R211	QRD161J-122	CR	1.2 K 1/6 W
R212	QRD161J-105	CR	1 M 1/6 W
R213	QRD161J-104	CR	100 K 1/6 W
R214	QRD161J-105	CR	1 M 1/6 W
R215	QRD161J-104	CR	100 K 1/6 W
R216	QRD161J-105	CR	1 M 1/6 W
R217	QRD161J-104	CR	100 K 1/6 W
R218	QRD161J-105	CR	1 M 1/6 W
R219	QRD161J-104	CR	100 K 1/6 W
R220	QRD161J-101	CR	100 K 1/6 W
R221	QRD161J-102	CR	1 K 1/6 W
R222	QRD161J-153	CR	15 K 1/6 W
R223	QRD161J-182	CR	1.8 K 1/6 W
R224	QRD161J-222	CR	2.2 K 1/6 W
R225	QRD161J-104	CR	100 K 1/6 W
R226	QRD161J-472	CR	4.7 K 1/6 W
R227	QRD161J-104	CR	100 K 1/6 W
R229	QRD161J-104	CR	100 K 1/6 W
R231	QRD161J-104	CR	100 K 1/6 W
R232	QRD161J-682	CR	6.8 K 1/6 W
R233	QRD161J-334	CR	330 K 1/6 W*4
R234	QRD161J-822	CR	8.2 K 1/6 W
R235	QRD161J-333	CR	33 K 1/6 W
R236	QRD161J-561	CR	560 1/6 W
R237	QRD161J-152	CR	1.5 K 1/6 W
R239	QRD161J-471	CR	470 1/6 W
R240	QVPB613-501	VR	500 R.GAIN
R242	QRD161J-681	CR	680 1/6 W
R243	QRD161J-222	CR	2.2 K 1/6 W
R244	QRD161J-122	CR	1.2 K 1/6 W
R245	QRD161J-123	CR	12 K 1/6 W
R246	QRD161J-472	CR	4.7 K 1/6 W
R247	QRD161J-153	CR	15 K 1/6 W
R248	QRD161J-392	CR	3.9 K 1/6 W
R249	QRD161J-392	CR	3.9 K 1/6 W
R250	QRD161J-560	CR	56 1/6 W
R251	QRD161J-560	CR	56 1/6 W
R252	QRD161J-680	CR	68 1/6 W
R253	QRD161J-680	CR	68 1/6 W
R301	QRV141F-75R0AY	MFR	75 1/4 W
R302	QRD161J-150	CR	15 1/6 W
R303	QRD161J-473	CR	47 K 1/6 W
R304	QRD161J-333	CR	33 K 1/6 W
R305	QRD161J-681	CR	680 1/6 W
R306	QRD161J-681	CR	680 1/6 W
R307	QRD161J-121	CR	120 1/6 W
R308	QRD161J-121	CR	120 1/6 W
R309	QRD161J-680	CR	68 1/6 W
R310	QRD161J-101	CR	100 1/6 W

Symbol No.	Part No.	Part Name	Description
R311	QRD161J-122	CR	1.2 K 1/6 W
R312	QRD161J-105	CR	1 M 1/6 W
R313	QRD161J-104	CR	100 K 1/6 W
R314	QRD161J-105	CR	1 M 1/6 W
R315	QRD161J-104	CR	100 K 1/6 W
R316	QRD161J-105	CR	1 M 1/6 W
R317	QRD161J-104	CR	100 K 1/6 W
R318	QRD161J-105	CR	1 M 1/6 W
R319	QRD161J-104	CR	100 K 1/6 W
R320	QRD161J-101	CR	100 K 1/6 W
R321	QRD161J-102	CR	1 M 1/6 W
R322	QRD161J-153	CR	15 K 1/6 W
R323	QRD161J-182	CR	1.8 K 1/6 W
R324	QRD161J-222	CR	2.2 K 1/6 W
R325	QRD161J-104	CR	100 K 1/6 W
R326	QRD161J-472	CR	4.7 K 1/6 W
R327	QRD161J-104	CR	100 K 1/6 W
R329	QRD161J-104	CR	100 K 1/6 W
R331	QRD161J-104	CR	100 K 1/6 W
R332	QRD161J-682	CR	6.8 K 1/6 W
R333	QRD161J-334	CR	330 K 1/6 W *4
R334	QRD161J-822	CR	8.2 K 1/6 W
R335	QRD161J-333	CR	33 K 1/6 W
R336	QRD161J-561	CR	560 1/6 W
R337	QRD161J-152	CR	1.5 K 1/6 W
R339	QRD161J-471	CR	470 1/6 W
R340	QVPB613-501	VR	500 G.GAIN
R342	QRD161J-681	CR	680 1/6 W
R343	QRD161J-222	CR	2.2 K 1/6 W
R344	QRD161J-122	CR	1.2 K 1/6 W
R345	QRD161J-123	CR	12 K 1/6 W
R346	QRD161J-472	CR	4.7 K 1/6 W
R347	QRD161J-153	CR	15 K 1/6 W
R348	QRD161J-392	CR	3.9 K 1/6 W
R349	QRD161J-392	CR	3.9 K 1/6 W
R350	QRD161J-560	CR	56 1/6 W
R351	QRD161J-560	CR	56 1/6 W
R352	QRD161J-680	CR	68 1/6 W
R353	QRD161J-680	CR	68 1/6 W
R401	QRV141F-75R0AY	MFR	75 1/4 W
R402	QRD161J-150	CR	15 1/6 W
R403	QRD161J-473	CR	47 K 1/6 W
R404	QRD161J-333	CR	33 K 1/6 W
R405	QRD161J-681	CR	680 1/6 W
R406	QRD161J-681	CR	680 1/6 W
R407	QRD161J-121	CR	120 1/6 W
R408	QRD161J-121	CR	120 1/6 W
R409	QRD161J-680	CR	68 1/6 W
R410	QRD161J-101	CR	100 1/6 W
R411	QRD161J-122	CR	1.2 K 1/6 W
R412	QRD161J-105	CR	1 M 1/6 W
R413	QRD161J-104	CR	100 K 1/6 W
R414	QRD161J-105	CR	1 M 1/6 W
R415	QRD161J-104	CR	100 K 1/6 W
R416	QRD161J-105	CR	1 M 1/6 W
R417	QRD161J-104	CR	100 K 1/6 W
R418	QRD161J-105	CR	1 M 1/6 W
R419	QRD161J-104	CR	100 K 1/6 W
R420	QRD161J-101	CR	100 1/6 W

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Symbol No.	Part No.	Part Name	Description
R421	QRD161J-102	CR	1 K 1/6 W
R422	QRD161J-153	CR	15 K 1/6 W
R423	QRD161J-182	CR	1.8 K 1/6 W
R424	QRD161J-222	CR	2.2 K 1/6 W
R425	QRD161J-104	CR	100 K 1/6 W
R426	QRD161J-472	CR	4.7 K 1/6 W
R427	QRD161J-104	CR	100 K 1/6 W
R429	QRD161J-104	CR	100 K 1/6 W
R431	QRD161J-104	CR	100 K 1/6 W
R432	QRD161J-682	CR	6.8 K 1/6 W
R433	QRD161J-334	CR	330 K 1/6 W *4
R434	QRD161J-822	CR	8.2 K 1/6 W
R435	QRD161J-333	CR	33 K 1/6 W
R436	QRD161J-561	CR	560 1/4 W
R437	QRD161J-152	CR	1.5 K 1/6 W
R439	QRD161J-471	CR	470 1/6 W
R440	QVPB613-501	VR	500 B.GAIN
R442	QRD161J-681	CR	680 1/6 W
R443	QRD161J-222	CR	2.2 K 1/6 W
R444	QRD161J-122	CR	1.2 K 1/6 W
R445	QRD161J-123	CR	12 K 1/6 W
R446	QRD161J-472	CR	4.7 K 1/6 W
R447	QRD161J-153	CR	15 K 1/6 W
R448	QRD161J-392	CR	3.9 K 1/6 W
R449	QRD161J-392	CR	3.9 K 1/6 W
R450	QRD161J-560	CR	56 1/6 W
R451	QRD161J-560	CR	56 1/6 W
R452	QRD161J-680	CR	68 1/6 W
C201	QER41AM-476	E Cap	47 10 V
C202	QER41AM-476	E Cap	47 10 V
C203	QCS11HJ-9R0	C Cap	9 P 50 V
C204	QCS11HJ-220	C Cap	22 P 50 V
C205	QCS11HJ-680	C Cap	68 P 50 V
C206	QCS11HJ-330	C Cap	33 P 50 V
C207	QCS11HJ-560	C Cap	56 P 50 V
C208	QCS11HJ-120	C Cap	12 P 50 V
C209	QCS11HJ-680	C Cap	68 P 50 V
C211	QCS11HJ-820	C Cap	82 P 50 V
C213	QER40JM-107	E Cap	100 6.3 V
C214	QAT3001-061	T Cap	60 P F. RESPONSE
C215	QETA1AM-227	E Cap	220 10 V *3
	QETA1AM-477	E Cap	470 10 V *4
C218	QER41HM-105	E Cap	1 50 V
C219	QER41CM-476	E Cap	47 16 V
C301	QER41AM-476	E Cap	47 10 V
C302	QER41AM-476	E Cap	47 10 V
C303	QCS11HJ-9R0	C Cap	9 P 50 V
C304	QCS11HJ-220	C Cap	22 P 50 V
C305	QCS11HJ-680	C Cap	68 P 50 V
C306	QCS11HJ-330	C Cap	33 P 50 V
C307	QCS11HJ-560	C Cap	56 P 50 V
C308	QCS11HJ-120	C Cap	12 P 50 V
C309	QCS11HJ-680	C Cap	68 P 50 V
C311	QCS11HJ-820	C Cap	82 P 50 V

Symbol No.	Part No.	Part Name	Description
C313	QER40JM-107	E Cap	100 6.3 V
C314	QAT3001-061	T Cap	60 P F. RESPONSE
C315	QETA1AM-227	E Cap	220 10 V *3
	QETA1AM-477	E Cap	470 10 V *4
C318	QER41HM-105	E Cap	1 50 V
C319	QER41CM-476	E Cap	47 16 V
C401	QER41AM-476	E Cap	47 10 V
C402	QER41AM-476	E Cap	47 10 V
C403	QCS11HJ-9R0	C Cap	9 P 50 V
C404	QCS11HJ-220	C Cap	22 P 50 V
C405	QCS11HJ-680	C Cap	68 P 50 V
C406	QCS11HJ-330	C Cap	33 P 50 V
C407	QCS11HJ-560	C Cap	56 P 50 V
C408	QCS11HJ-120	C Cap	12 P 50 V
C409	QCS11HJ-680	C Cap	68 P 50 V
C411	QCS11HJ-820	C Cap	82 P 50 V
C413	QER40JM-107	E Cap	100 6.3 V
C414	QAT3001-061	T Cap	60 P F. RESPONSE
C415	QETA1AM-227	E Cap	220 10 V *3
	QETA1AM-477	E Cap	470 10 V *4
C418	QER41HM-105	E Cap	1 50 V
C419	QER41CM-476	E Cap	47 16 V
CN28	SCV1228-006	Connector	6 Pin
CN29	SCV1228-007	Connector	7 Pin
CN30	SCV1228-006	Connector	6 Pin
CN31	SCV1228-004	Connector	4 Pin

6.2 RM BOARD assembly [0][2] [0][2][ ][ ][ ][ ][ ]

Symbol No.	Part No.	Part Name	Description
IC1	TC4011BP	IC	TOSHIBA
IC2	TC4053BP	IC	TOSHIBA
IC3	NJM4558D	IC	JRC
IC4	NJM4558D	IC	JRC
⚠ IC5	HA17808P	IC	HITACHI
IC6	NJM79L05A	IC	JRC
IC7	TA78L005AP	IC	TOSHIBA
IC8	TC4028BP	IC	TOSHIBA
IC9	TL7705CP	IC	TEXAS
IC10	PLSC1004V2-01	IC	HITACHI CPU
IC11	SN75157P	IC	TEXAS
IC12	SN75158P	IC	TEXAS
Q1	2SA564(R)	Transistor	MATSUSHITA
Q2	2SA564(R)	Transistor	MATSUSHITA
Q3	2SC1685(R.S)	Transistor	MATSUSHITA
Q4	2SC641K	Transistor	HITACHI
Q5	2SC1685(R.S)	Transistor	MATSUSHITA
Q6	2SC1906	Transistor	HITACHI
Q7	2SC1685(R.S)	Transistor	
Q8	2SC1685(R.S)	Transistor	MATSUSHITA
Q10	2SC1685(R.S)	Transistor	MATSUSHITA
Q11	2SC1685(R.S)	Transistor	MATSUSHITA
Q12	2SA564(R)	Transistor	MATSUSHITA
Q13	2SA684(R)	Transistor	MATSUSHITA
Q14	2SA684(R)	Transistor	MATSUSHITA
⚠ Q17	PC817D	Photo Couoler	
Q18	2SA564(R)	Transistor	MATSUSHITA
⚠ Q19	2SA564(R)	Transistor	MATSUSHITA
⚠ Q20	2SA1020(Y)	Transistor	TOSHIBA
Q21	2SC1685(R.S)	Transistor	MATSUSHITA
Q22	2SC1685(R.S)	Transistor	MATSUSHITA
⚠ Q23	PC817D	Photo Couoler	
Q24	2SC1685(R.S)	Transistor	MATSUSHITA
Q101	2SC829(C)TA	Transistor	MATSUSHITA
Q102	2SK163(M.N)	F.E.T.	MATSUSHITA
Q103	2SK163(M.N)	F.E.T.	NEC
Q104	2SK163(M.N)	F.E.T.	NEC
Q105	2SK163(M.N)	F.E.T.	NEC
Q106	2SC829(C)TA	Transistor	MATSUSHITA
Q107	2SK163(M.N)	F.E.T.	NEC
Q108	2SK163(M.N)	F.E.T.	NEC
Q109	2SK163(M.N)	F.E.T.	NEC
Q110	2SK163(M.N)	F.E.T.	NEC
Q111	2SC829(C)	Transistor	MATSUSHITA
Q112	2SA838(C)	Transistor	MATSUSHITA
Q113	2SC829(C)	Transistor	MATSUSHITA
Q114	2SC829(C)	Transistor	MATSUSHITA
Q115	2SC1685(R.S)	Transistor	MATSUSHITA
Q116	2SC1685(R.S)	Transistor	MATSUSHITA
Q117	2SC1685(R.S)	Transistor	MATSUSHITA

Symbol No.	Part No.	Part Name	Description
D1	MA165	Diode	MATSUSHITA
D2	MA165	Diode	MATSUSHITA
D3	MA165	Diode	MATSUSHITA
D4	MA165	Diode	MATSUSHITA
D5	MA165	Diode	MATSUSHITA
D6	MA165	Diode	MATSUSHITA
⚠ D7	RB-151	Diobe Bridge	SANKEN
D8	HZ6(2C)L	Zener Diode	HITACHI 6 V
D9	HZ11(3B)L	Zener Diode	HITACHI 11 V
⚠ D10	CTM-21S	Diode	SANKEN
⚠ D11	ERB12-02	Diode	FUJI ELECTRIC
D12	MA165TA	Diode	MATSUSHITA
D101	HZ6(2C)L	Zener Diode	HITACHI
D102	SVC321(A)	V.C. Diode	SANYO
R1	QRD161J-103	CR	10 K 1/6 W
R2	QRD161J-393	CR	39 K 1/6 W
R3	QRD161J-102	CR	1 K 1/6 W
R4	QRD161J-271	CR	270 1/6 W
R5	QRD161J-560	CR	56 1/6 W
R6	QRD161J-102	CR	1 K 1/6 W
R7	QRD161J-332	CR	3.3 K 1/6 W
R8	QRD161J-471	CR	470 1/6 W
R9	QRD161J-563	CR	56 K 1/6 W
R10	QRD161J-273	CR	27 K 1/6 W
R11	QRD161J-561	CR	560 1/6 W
R12	QRD161J-102	CR	1 K 1/6 W
R13	QRD161J-330	CR	33 1/6 W
R14	QRD161J-683	CR	68 K 1/6 W
R15	QVPB613-204	VR	200 K BF WIDTH
R16	QRD161J-224	CR	220 K 1/6 W
R17	QRD161J-333	CR	33 K 1/6 W
R18	QRD161J-562	CR	5.6 K 1/6 W
R19	QRD161J-563	CR	56 K 1/6 W
R20	QRD161J-153	CR	15 K 1/6 W
R21	QRD161J-821	CR	820 1/6 W
R22	QRD161J-681	CR	680 1/6 W
R23	QRD161J-392	CR	3.9 K 1/6 W
R24	QRD161J-123	CR	12 K 1/6 W
R25	QRD161J-102	CR	1 K 1/6 W
R26	QRD161J-153	CR	15 K 1/6 W
R27	QRD161J-822	CR	8.2 K 1/6 W
R28	QRD161J-122	CR	1.2 K 1/6 W
R29	QRD161J-271	CR	270 1/6 W
R30	QRD161J-151	CR	150 1/6 W
R31	QVPB613-501	VR	500 B.LEVEL
R32	QRD161J-561	CR	560 1/6 W
R33	QRD161J-680	CR	68 1/6 W
R34	QRD161J-103	CR	10 K 1/6 W *4
R35	QRD161J-393	CR	39 K 1/6 W
R36	QRD161J-563	CR	56 K 1/6 W
R37	QRD161J-471	CR	470 1/6 W
R38	QRD161J-472	CR	4.7 K 1/6 W
R39	QRD161J-681	CR	680 1/6 W
R40	QRD161J-221	CR	220 1/6 W
R41	QRD161J-152	CR	1.5 K 1/6 W

Symbol No.	Part No.	Part Name	Description
R42	QRD161J-271	CR	270 1/6 W
R43	QRD161J-220	CR	22 1/6 W
R44	QRD161J-680	CR	68 1/6 W
R45	QRD161J-472	CR	4.7 K 1/6 W
R46	QRD161J-220	CR	22 1/6 W
R47	QRD161J-472	CR	4.7 K 1/6 W
R48	QRD161J-220	CR	22 1/6 W
R49	QRD161J-822	CR	8.2 K 1/6 W
R50	QRD161J-822	CR	8.2 K 1/6 W
R51	QRD161J-103	CR	10 K 1/6 W
R52	QRD161J-103	CR	10 K 1/6 W
R53	QRD161J-223	CR	22 K 1/6 W
R54	QVPB613-503	VR	50 K REAR
R55	QVPB613-103	VR	10 K SIDE TONE
R56	QRD161J-561	CR	560 1/6 W
R57	QRD161J-822	CR	8.2 K 1/6 W
R58	QRD161J-103	CR	10 K 1/6 W
R59	QRD161J-223	CR	22 K 1/6 W
R60	QRD161J-223	CR	22 K 1/6 W
R61	QRD161J-560	CR	56 1/6 W
R62	QRD161J-223	CR	22 K 1/6 W
R63	QRD161J-472	CR	4.7 K 1/6 W
R64	QVPB613-503	VR	50 K CAM EAR
R65	QRD161J-122	CR	1.2 K 1/6 W
R68	QRD161J-182	CR	1.8 K 1/6 W
R69	QRD161J-103	CR	10 K 1/6 W
R70	QRD161J-223	CR	22 K 1/6 W
R71	QRD161J-103	CR	10 K 1/6 W
R72	QRD161J-103	CR	10 K 1/6 W
R73	QRM054K-R39	MFR	0.39 5 W
R74	QRM054K-R47	MFR	0.47 5 W
R75	QRD161J-560	CR	56 1/6 W
R76	QRD161J-152	CR	1.5 K 1/6 W
R77	QRD161J-152	CR	1.5 K 1/6 W
R78	QRD161J-101	CR	100 1/6 W *3
R79	QRD161J-222	CR	2.2 K 1/6 W
R80	QVPB613-102	VR	1 K 14 V ADJ
R81	QRD161J-472	CR	4.7 K 1/6 W
R82	QRD161J-272	CR	2.7 K 1/6 W
R83	QRD161J-821	CR	820 1/6 W
R84	QRD161J-392	CR	3.9 K 1/6 W
R85	QRD161J-222	CR	2.2 K 1/6 W
R86	QRD161J-472	CR	4.7 K 1/6 W
R87	QRD161J-222	CR	2.2 K 1/6 W
R88	QVPB613-501	VR	500 +9V ADJ
R89	QRD161J-103	CR	10 K 1/6 W
R90	QRD161J-103	CR	10 K 1/6 W
R91	QRD161J-223	CR	22 K 1/6 W
R92	QRD161J-103	CR	10 K 1/6 W
R93	QRD161J-103	CR	10 K 1/6 W
R94	QRD161J-681	CR	680 1/6 W
R95	QRD161J-103	CR	10 K 1/6 W
R96	QRD161J-473	CR	47 K 1/6 W
R97	QRD161J-473	CR	47 K 1/6 W
R98	QRD161J-473	CR	47 K 1/6 W
R99	QRD161J-103	CR	10 K 1/6 W
R100	QRD161J-101	CR	100 1/6 W
R101	QRV141F-75R0AY	MFR	75 1/6 W
R102	QRD161J-150	CR	15 1/6 W

Symbol No.	Part No.	Part Name	Description
R103	QRD161J-273	CR	27 K 1/6 W
R104	QRD161J-333	CR	33 K 1/6 W
R105	QRD161J-681	CR	680 1/6 W
R106	QRD161J-681	CR	680 1/6 W
R107	QRD161J-121	CR	120 1/6 W
R108	QRD161J-121	CR	120 1/6 W
R109	QRD161J-680	CR	68 1/6 W
R110	QRD161J-101	CR	100 1/6 W
R111	QRD161J-821	CR	820 1/6 W
R112	QRD161J-105	CR	1 M 1/6 W
R113	QRD161J-104	CR	100 M 1/6 W
R114	QRD161J-105	CR	1 K 1/6 W
R115	QRD161J-104	CR	100 K 1/6 W
R116	QRD161J-105	CR	1 M 1/6 W
R117	QRD161J-104	CR	100 K 1/6 W
R118	QRD161J-105	CR	1 M 1/6 W
R119	QRD161J-104	CR	100 K 1/6 W
R120	QRD161J-101	CR	100 1/6 W
R121	QRD161J-102	CR	1 K 1/6 W
R122	QRD161J-153	CR	15 K 1/6 W
R123	QRD161J-182	CR	1.8 K 1/6 W
R124	QRD161J-222	CR	2.2 K 1/6 W
R125	QRD161J-104	CR	100 K 1/6 W
R126	QRD161J-472	CR	4.7 K 1/6 W
R127	QRD161J-104	CR	100 K 1/6 W
R129	QRD161J-104	CR	100 K 1/6 W
R131	QRD161J-104	CR	100 K 1/6 W
R132	QRD161J-682	CR	6.8 K 1/6 W
R133	QRD161J-334	CR	330 K 1/6 W
R134	QRD161J-822	CR	8.2 K 1/6 W
R135	QRD161J-333	CR	33 K 1/6 W
R136	QRD161J-561	CR	560 1/6 W
R137	QRD161J-152	CR	1.5 K 1/6 W
R138	QRD161J-104	CR	100 K 1/6 W
R139	QRD161J-471	CR	470 1/6 W
R141	QVPB613-501	VR	500 GAIN
R142	QRD161J-471	CR	470 1/6 W
R143	QRD161J-222	CR	2.2 K 1/6 W
R144	QRD161J-122	CR	1.2 K 1/6 W
R145	QRD161J-123	CR	12 K 1/6 W
R146	QRD161J-472	CR	4.7 K 1/6 W
R147	QRD161J-153	CR	15 K 1/6 W
R148	QRD161J-392	CR	3.9 K 1/6 W
R149	QRD161J-392	CR	3.9 K 1/6 W
R150	QRD161J-560	CR	56 1/6 W
R151	QRD161J-560	CR	56 1/6 W
R152	QRD161J-680	CR	68 1/6 W
R153	QRD161J-680	CR	68 1/6 W
R154	QRD161J-331	CR	330 1/6 W
R155	QRD161J-331	CR	330 1/6 W
R461	QRV141F-75R0AY	MFR	75 1/4 W
R462	QRV141F-75R0AY	MFR	75 1/4 W
R463	QRD161J-680	CR	68 1/6 W
R464	QRD161J-103	CR	10 K 1/6 W *4
R465	QRD161J-103	CR	10 K 1/6 W *4
R466	QRD161J-332	CR	3.3 K 1/6 W

Revised on Oct. 1990.

Symbol No.	Part No.	Part Name	Description
C1	QER41AM-476	E Cap	47 10 V
C2	QCS11HJ-150	C Cap	15 P 50 V
C3	QER41CM-476	E Cap	47 16 V
C4	QER41CM-106	E Cap	10 16 V
C5	QCS11HJ-120	C Cap	12 P 50 V
C6	QFN41HJ-103	MY Cap	0.01 50 V
C7	QFN41HJ-103	MY Cap	0.01 50 V
C8	QFN41HJ-103	MY Cap	0.01 50 V
C9	QEPA1CM-106	E Cap	10 16 V
C10	QER41AM-106	E Cap	10 10 V
C11	QER41AM-476	E Cap	47 10 V
C12	QETA1AM-227	E Cap	220 10 V
C13	QER41CM-476	E Cap	47 16 V
C14	QER41AM-476	E Cap	47 10 V
C15	QER41AM-476	E Cap	47 10 V *4
C16	QCS11HJ-100	C Cap	10 P 50 V
C17	QETA1AM-227	E Cap	220 10 V
C18	QER41CM-476	E Cap	47 16 V
C19	QETA1EM-476	E Cap	47 25 V
C20	QFN41HJ-104	MY Cap	0.1 50 V
C21	QFN41HJ-104	MY Cap	0.1 50 V
C22	QCS11HJ-102	C Cap	0.001 50 V
C23	QFN11HJ-123	MY Cap	0.001 10 V
C24	QEPA1CM-106	E Cap	10 16 V
C25	QFN41HJ-272	MY Cap	0.0027 16 V
C26	QETA1CM-227	E Cap	220 16 V
C27	QCS11HJ-102	C Cap	0.001 50 V
C28	QEPA1EM-475	E Cap	4.7 30 V
C29	QCS11HJ-102	C Cap	0.001 50 V
C30	QEPA1EM-475	E Cap	4.7 30 V
C31	QER41HM-105	E Cap	1 50 V
C32	QFN41HJ-104	MY Cap	0.1 50 V
C33	SCV1295-478	E Cap	4700 35 V
C34	SCV1295-478	E Cap	4700 35 V
C35	QETA1EM-477	E Cap	470 25 V
C36	QFN41HJ-103	MY Cap	0.01 50 V
C37	QER41CM-476	E Cap	47 16 V
C38	QETA1CM-227	E Cap	220 16 V
C39	QETA1EM-476	E Cap	47 25 V
C40	QETA1VM-107	E Cap	100 35 V
C41	QER41HM-105	E Cap	1 50 V
C42	QER41EM-106	E Cap	10 25 V
C43	QER41HM-105	E Cap	1 50 V
C44	QFN41HJ-473	MY Cap	0.047 50 V
C45	QER41CM-476	E Cap	47 16 V
C46	QCT05CH-220	C Cap	22 P
C47	QCT05CH-220	C Cap	22 P
C48	QFN41HJ-104	MY Cap	0.1 50 V
C49	QER41CM-106	E Cap	10 16 V
C50	QER41AM-476	E Cap	47 10 V
C51	QER41AM-476	E Cap	47 10 V
C52	QER41AM-476	E Cap	47 10 V
C53	QFN41HJ-104	MY Cap	0.1 50 V
C54	QCS11HJ-102	C Cap	0.001 50 V
C65	QCF12HP-103	C Cap	0.01
C101	QER41AM-476	E Cap	47 10 V
C102	QER41AM-476	E Cap	47 10 V
C103	QAT3001-057	TR Cap	20 P

Symbol No.	Part No.	Part Name	Description
C104	QCS11HJ-220	C Cap	22 50 V
C105	QCS11HJ-680	C Cap	68 P 50 V
C106	QCS11HJ-330	C Cap	33 P 50 V
C107	QCS11HJ-560	C Cap	56 P 50 V
C108	QCS11HJ-120	C Cap	12 P 50 V
C109	QCS11HJ-680	C Cap	68 P 50 V
C111	QCS11HJ-820	C Cap	82 P 50 V
C113	QER40JM-107	E Cap	100 6.3 V
C114	QCS11HJ-181	C Cap	180 P 50 V
C115	QETA1AM-227	E Cap	220 10 V *1
	QETA1AM-477	E Cap	470 10 V *2
C116	QETA1AM-227	E Cap	220 10 V *1
	QETA1AM-477	E Cap	470 10 V *2
C117	QER41HM-105	E Cap	1 50 V
C118	QER41HM-105	E Cap	1 50 V
C119	QER41CM-476	E Cap	47 16 V
L3	SA40318-00A	Choke Coil	
L4	SA40318-00A	Choke Coil	
L5	SSV0362	Filter	
L6	SSV0362	Filter	
L7	SSV0362	Filter	
L8	SSV0362	Filter	
T2	SCV0514-001	Mic Trans	
T3	SCV0514-001	Mic Trans	
X1	SCV1238-001	X'tal	3.6864 MHz
S2	SCV1148-006	Connector	TALLY (V↔M)
S11	SCV1275-001	Toggle Switch	75 ON/OFF (AUX VIDEO IN)
S12	SCV1275-001	Toggle Switch	75 ON/OFF (GENCOCK IN)
CN1	SCV1227-011	Connector	11 Pin
CN3	SCV1227-006	Connector	6 Pin
CN4	SCV1227-008	Connector	8 Pin
CN5	SCV1227-003	Connector	3 Pin
CN6	SCV1227-004	Connector	4 Pin
⚠ CN7	SM3490-004	Connector	4 Pin
⚠ CN8	SM3490-004	Connector	4 Pin
⚠ CN9	SM3490-005	Connector	5 Pin
CN10	SM3490-003	Connector	3 Pin
CN11	SM3490-003	Connector	3 Pin
CN13	SCV1227-005	Connector	5 Pin
CN14	SCV1227-003	Connector	3 Pin
CN15	SCV1227-007	Connector	7 Pin
CN16	SCV1227-005	Connector	5 Pin
J5	SCV1269-001	Connector	
J6	SCV1269-001	Connector	
J7	SCV1269-001	Connector	
J8	SCV1269-001	Connector	
CP1	ICP-F10	FR	*4

6.3 FR-1 BOARD assembly [0][3]

[0][3]□□□□□□□

Symbol No.	Part No.	Part Name	Description
D16	SLR-54UR5	LED	RED (TALLY)
D17	TLG102A	LED	GREEN (AUTO SET)
R157	QVCA21B-S54	VR	50 K INTERCOM VOL.
R158	QVCA21B-S54	VR	2.2 K 1/6 W
R159	QRD161J-222	CR	22 K 1/6 W
R160	QRD161J-223	CR	22 K 1/6 W
R161	QRD161J-223	CR	22 K 1/6 W
R162	QRD161J-223	CR	22 K 1/6 W
R163	QRD161J-223	CR	22 K 1/6 W
R164	QRD161J-223	CR	22 K 1/6 W
R165	QRD161J-223	CR	22 K 1/6 W
R166	QRD161J-223	CR	22 K 1/6 W
R167	QRD161J-223	CR	22 K 1/6 W
R168	QRD161J-223	CR	22 K 1/6 W
R169	QRD161J-223	CR	22 K 1/6 W
R170	QRD161J-223	CR	22 K 1/6 W
R171	QRD161J-561	CR	560 1/6 W
R172	GC31875-203C	VR	20 K R.GAIN
R173	GC31875-203C	VR	20 K B.GAIN
R174	–	–	
R175	QVCA21B-S24	VR	20 K M.BLACK
R177	QVCA21B-S24	CR	20 K IRIS
R178	QRD161J-223	CR	22 K 1/6 W
C64	QER41AM-476	E Cap	47 K 10 V
S3	SCV0517-101	Rotary Switch	BCD SIWTCH (SHUTTER)
S4	SCV0338-002	Toggle Switch	MODE
S5	SCV0338-002	Toggle Switch	HI-SENS
S6	SCV0656-023-6S	Slide Switch	WHITE BALANCE
S7	SCV0516-A19JB2	Toggle Switch	AUTO SET
S8	SCV0337-002	Toggle Switch	IRIS (AUTOMANUAL)

6.4 FR-2 BOARD assembly [0][4]

[0][4]□□□□□□□

Symbol No.	Part No.	Part Name	Description
Q 26	2SA564(R)	Transistor	松下
Q 27	2SC1685(R.S)	Transistor	松下
Q 28	2SC1685(R.S)	Transistor	松下
Q 29	2SC1685(R.S)	Transistor	松下
D 18	SLR-54UR5	LED	RED (POWER)
R179	SCV0515-501C	VR	500 CABLE LENGTH GAIN
R180	QRD161J-183	CR	18 K 1/6 W
R182	QRD161J-183	CR	18 K 1/6 W
R183	QRD161J-102	CR	1 K 1/6 W
R184	QRD161J-153	CR	15 K 1/6 W
R185	QRD161J-393	CR	39 K 1/6 W
R186	QRD161J-102	CR	1 K 1/6 W
R187	QRD161J-152	CR	1.5 K 1/6 W
R188	QRD161J-102	CR	1 K 1/6 W
R189	QRD161J-821	CR	820 1/6 W
R190	QRD161J-561	CR	560 1/6 W
R191	QRD161J-821	CR	820 1/6 W
R192	QRD161J-821	CR	820 1/6 W
R193	QRD161J-561	CR	560 1/6 W
R194	QRD161J-681	CR	680 1/6 W
R195	QRD161J-681	CR	680 1/6 W
R196	SCV0515-202	VR	2 K SC PHASE FINE
R197	QRD161J-562	CR	5.6 K 1/6 W
R198	QRD161J-153	CR	15 K 1/6 W
R199	QVCA21B-S24	VR	20 K H PHASE
R200	QRD161J-392	CR	3.9 K 1/6 W
C56	QCT05XK-151	C Cap	150
C57	QCT05XK-220	C Cap	22
C58	QEPA1HM-105	E Cap	1 50 V
C59	QFF41HJ-101	MY Cap	100 50 V
C60	QFF41HJ-101	MY Cap	100 50 V
C61	QFF41HJ-560	MY Cap	56 50 V
C62	QEPA1HM-105	E Cap	1 50 V
C63	QER41CM-476	E Cap	47 16 V
L1	SCV0331-120	Peaking Coil	12 μH
L2	PU48530-560K	Peaking Coil	56 μH (NTSC)
S9	SCV0517-101	Rotary Switch	BCD SWITCH(CABLE LENGTH)
S10	SCV0656-023-6S	Slide Switch	SC PHASE COARSE

Revised on Oct. 1990.

6.5 INTCOM BOARD assembly [0][5] [0][5][ ][ ][ ][ ][ ]

Symbol No.	Part No.	Part Name	Description
R463	QRD161J-560	CR	56 1/6W

No. 6463

JVC Service Manual

CAMERA CABLE

MODEL **VC-P110 series**
(VC-P110/-P112/-P113/-P114)

CABLE ADAPTER

MODEL **KA-280**

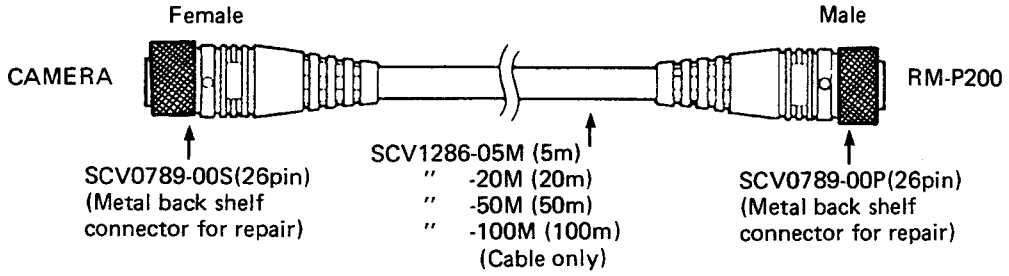
NOTES:
- The VC-P110 series camera cables for connecting RM-P200 to the KY-20/KY-15 color video camera include the following 4 types according to cable lengths.

  VC-P110 : 5 m VC-P113: 50 m

  VC-P112: 20 m VC-P114: 100 m
- KA-280 is a cable extender adapter to connect two VC-P110 series camera cable.
- The maximum length of the camera cables is 100 m. Do not make it longer than that.
- The VC-P110 series camera cable is not available for KY-2000 series color video camera : connector style and wiring specification of this cable are not match it.

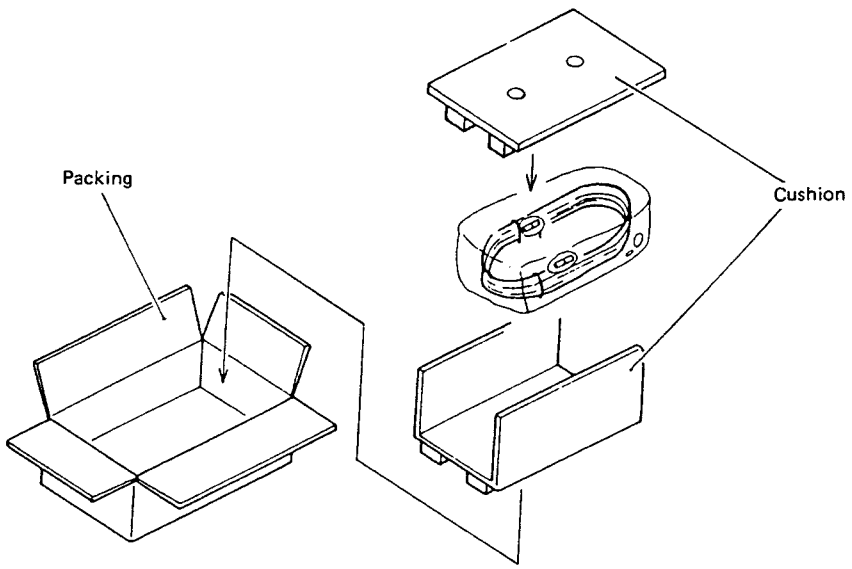
1. WIRING OF VC-P110 SERIES' (26pin To 26pin)

PIN NO.	PIN NO.	SIGNAL	WIRE COLOR
1	1	Composite Video	BROWN
2	2	GND	
3	3	GND	
4	4	G/Y/Y Video	RED
5	5	R/R-Y/C Video	ORANGE
6	6	GND	
7	7	B/B-Y Video	YELLOW
8	8	GND	
9	9	Intercom M (Mic)	BROWN / RED
10	10	Intercom E (Ear)	BROWN / WHITE
11	11	GND	
12	12	Audio L	BLACK
13	13	GND	
14	14	SID 1H	RED
15	15	SID 1L	RED / WHITE
16	16	Genlock	VIOLET
17	17	GND	
18	18	Aux Video	GREEN
19	19	GND	
20	20	SID 2H	ORANGE
21	21	NC	
22	22	SID 2L	ORANGE / WHITE
23	23	Audio R	WHITE
24	24	GND	
A	A	+14 V DC	BLACK
B	B	GND	WHITE

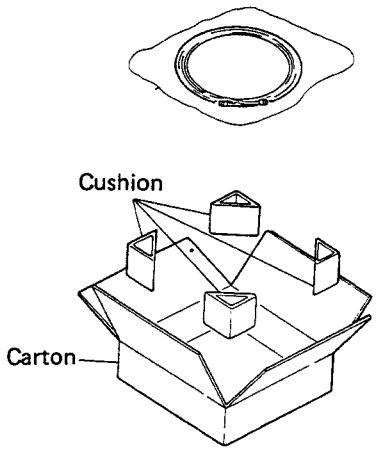


2. REPACKING

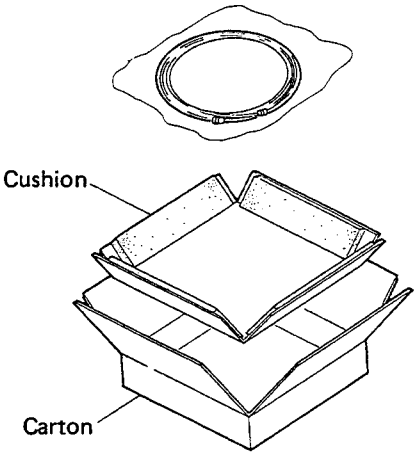
2.1 VC-P110 REPACKING



2.2 VC-P112 REPACKING



2.3 VC-P113 REPACKING



The VC-P114 is shipped in the figure that it is just wound around a wooden drum without a packing case.

2.4 KA-280 REPACKING